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Addresses.

IDEALS OF MEDICAL EDUCATION.[1]

BY JOHN S. BILLINGS, M.D.,
Surgeon in the United States Army.

(Continued from Vol. CXXIV, No. 26, page 623.)

HAVING thus roughly sketched what is wanted in the way of medical education by different classes of students — the article for which there is a market, let us next consider briefly what an university may wisely attempt to provide in this direction. Some suggestions on this point may perhaps be obtained from an examination of the condition of affairs as regards medical education in the University of Oxford.

The Corporation of Oxford has a little more than half the number of inhabitants possessed by the city of New Haven, and its relations to London are, in many respects, similar to those of New Haven with the cities of New York and Boston. For a number of years it has been urged by some physicians in England, that the University of Oxford with her great resources, has not been doing as much for medical education as she should have done, and that it is her duty to establish and maintain a completely organized medical school of the usual pattern, using the small local hospital and dispensary facilities for the clinical side of the work.

On the other hand, other physicians, of whom my friend Sir Henry Acland may be taken as the representative, maintain that it is much better that Oxford should use her resources in giving a broad foundation of literary and scientific culture, including, for those who propose to study medicine, the means of special instruction in general biology — and in comparative and human anatomy, physiology and pathology — and that the men thus prepared should go to the great Hospital Medical Schools of London to obtain their clinical training, after which, they may return and pass their final examinations and obtain the coveted degree of Doctor of Medicine from the University.

There is no doubt that this can be done, and that a great part of the scientific foundation of a complete medical training can be furnished by a well-equipped university, with little or no reference to clinical instruction at the same time and place. This, for example, is the course followed by many of the students in the Medical Department of the University of Virginia, and it seems to me that there is also no doubt that the men who go through such a course of training, followed by clinical training in a great city, will have a better course of instruction, a wider experience, and a better chance of seeing and appreciating the methods of great clinical teachers, than would those who obtained their clinical as well as their scientific training, in the small town, or than those who obtain all their instruction in a school devoted exclusively to medical studies. Upon this last point I need not dwell, for Dr. Welch, in his address before you in 1888, has clearly pointed out the advantages of giving to a medical school an university atmosphere, and of making the union of the school and the university close and intimate. It should be noted, however, that the more true this is, the more it is the duty of an university to maintain such a school, because educational work which cannot be, or is not, done so well elsewhere, has superior claims upon university aid. The chief thing which can be said in favor of the attempt to attract a large number of medical students of average qualifications to an institution having the means to give the higher education are, first, that it brings in more money, and, second, that it enables those professors who desire advanced workers, to select these from a somewhat wider field.

It must be confessed that nearly all our great American universities are unwilling to apply their funds to the creation and maintenance of a well-equipped medical department. They are willing to have such a department no doubt, but they want the money for establishing and maintaining it to be provided in addition to money which has been, or is to be, provided for the general purposes of the university. The ideal university culture of the present day appears to be designed to fit a man to take pleasure in his own thoughts and musings and in mental exercise in languages, literature, the higher mathematics, and the problems of physics and natural history. Incidentally his knowledge of these things may not only give him pleasure, but enable him to help others, but the studies are not to be pursued on account of any practical utility which they possess, but for the love of learning and pure science, that is, for personal gratification of a particular kind. Those who hold these views are apt to consider medicine as a technological matter, which should be left altogether to special schools, because, being practically useful in a commercial sense, the means of teaching it are sure to be provided through commercial interests, just as they are sure to be provided for the teaching of practical engineering. This is far from the old university idea as embodied in the three faculties and four nations of the University of Paris. So far as the interests of the public are concerned, it is only the possession and control of a large amount and variety of clinical material, or of unusually qualified clinical teachers, which makes it the positive duty to use it, or them, for purposes of medical instruction in order to train ordinary general practitioners of medicine. There is no present deficiency in the number of such practitioners, and we certainly have plenty of schools for producing them, so that there is no fear of failure in the supply.

But in medicine as in every other profession, art or trade, the supply of the best is never too great, and the demand for something better than that which already exists never ceases.

What then does an university, or its medical school, need in order that it may be able to supply the demand for this higher medical education? First, competent teachers. Second, suitable buildings, collections, books and apparatus. Third, clinical material. To secure and retain these things requires money, and brains to use it. First, as to the competent teachers. There are many teachers available, but the number of these who have shown that they are competent for, and suited to positions in a medical school which is to supply the best and something better, is limited — much more so than one who has not tried to find them would suppose, and these few are not seeking engagements. How many anatomists, or physiologists, or pathologists, of the first class, thoroughly trained, authorities in their special fields, capable of increasing knowledge, and with the peculiar gift of ability to teach — do you suppose there are in this country? It is a liberal estimate to say that a

[1] Address delivered before the Medical Faculty of Yale College, June 23, 1891.

dozen of each have thus far given evidence that they exist. And the great clinical teachers in medicine and surgery, the men who are up to the times in matters of diagnosis, pathology and therapeutics, and who are also successful teachers both by the spoken and written word — how many such have we — and especially how many such have we who are not fixed and established, so that they may be induced to go to a school which needs them? Such men are either men of genius, and even this boasted nineteenth century has produced them rarely, or they are men of talent made the most of by unflagging industry with special opportunities, and these are also rare. Yet these are the men whom a great university should seek to obtain and retain for her faculties. To do this, and to get the best work from such men, is by no means a mere matter of salary, although sufficient salaries must be paid. We have also to consider the buildings, collections, books and apparatus required, and this is largely a question of money. How much money? What would be the cost of establishing and maintaining a first-class medical school in this country at the present time? Let us suppose that one hundred and fifty students are to be provided for — that the course of instruction for those coming with a good high-school education is to occupy four years, and for those coming with the degree of Bachelor of Arts, and having done at least one year's work in a chemical laboratory and one year's work in a biological laboratory, the course shall occupy three years, that the last year's studies shall be almost exclusively clinical, and that provision is to be made for advanced post-graduate work.

We shall want, then, practical anatomy rooms for fifty students, a physiological laboratory, a pathological laboratory, a pharmacological laboratory, a laboratory of hygiene, and the means of clinical teaching, a library and a museum. The days have long gone by when one or two amphitheatres or lecture-rooms and a small museum were all the outfit required for medical teaching. The little amphitheatre of the University of Bologna was sufficient for almost every purpose of medical teaching, as that was carried on three hundred years ago, but now the lecture-room is the smallest part of the outfit required. In his evidence before the Royal Commission, Professor Lankester stated that to establish such a medical school at Oxford as he thought desirable, about $225,000 would be required for buildings, in addition to those already existing, and that about $100,000 a year would be required for running expenses. Professor Billroth estimates that about $400,000 would be required for buildings for the medical department of a university, exclusive of the buildings for clinical teaching, which he thinks would cost about as much more; and that the annual expense would be about $105,000. He says that these estimates are based on an average standard of efficiency — not the highest — and concludes by saying: "Let us hope that a rich man may some day give three millions of dollars to found a school to be devoted to medicine and natural science."

Perhaps these figures may seem high to you. Yet building is cheaper and salaries lower in England and in Germany than with us, if only first-class work and first-class men are accepted. To build and equip a laboratory which shall give work-room for seventy-five men, will cost here between $75,000 and $100,000. At least four such laboratories are needed by the ideal medical department, besides a building for general lectures, library, etc., which would cost about $50,000.

It is, of course, possible to consolidate all these into a single three- or four-story building, and thus save money, especially in cost of ground, but the results are not so good. I am not speaking now of temporary, makeshift buildings, but of permanent structures, which though plain should not be hideous, and should be thoroughly well built. Where land is abundant and not too dear, it is usually better to construct these laboratories one at a time, and endeavor to secure for each a proper endowment and equipment. The average expenses of each laboratory may be put at $15,000 per annum. In other words, it requires about $400,000 to build, equip and endow a physiological, pathological or hygienic laboratory such as is suited to the needs of a first-class university in this country. By paring down in various directions, this sum can be reduced to $300,000, but not lower without seriously impairing the efficiency of the plan. And in all this I have said nothing of the cost of the means for clinical instruction, which should be borne, in part at least, by the school, for the simple reason that only by doing this can the school have that control of hospital appointments which is so necessary for its proper work.

Of course, every professor who is skilled and energetic, and who is imbued with the true university spirit, has innumerable wants and suggestions which require money to supply and carry out. He wants the new books and journals relating to his specialty, specimens, apparatus, models and illustrations; and if he is at the head of one of the laboratories which I have named, the sum of $15,000 per annum will be required to pay him and his assistants, and to provide for their needs. All this means that the educating of physicians on this plan will cost the medical department between four and five thousand dollars for each graduate. It will receive from them eight hundred to one thousand dollars each, and the balance must be made up from subscriptions, appropriations or endowments. Practically, endowment is the only resource.

The student himself has to give four or five years' time and labor, and four or five thousand dollars, to obtain his medical education. For some, this expenditure of time and money will be an excellent investment; for others, not, even if they have enough of both to spare for this purpose. After all, the most that the university can do is to afford opportunities for learning, and a certain kind and amount of stimulus to mental work. The professor may declare that he will teach certain branches; but there are some sent to him for instruction who are not teachable, and the only thing he can do is to return them as little damaged as possible.

The number of men for whom it is specially desirable to provide laboratory and other special facilities for original work in physiology, pathology, pharmacology and hygiene is limited. There are not a great number of men who have the desire and the qualifications necessary for this sort of work, and the number of positions in which they can find remunerative employment in devoting themselves to such investigations, is still more limited.

The laboratory facilities in Germany are, as a whole, at present in excess of the number of properly qualified men who can be found to make use of them, although a few are overcrowded.

Advanced work and original investigations cannot, as a rule, be made by undergraduates, if for no other reason than that of lack of time.

Is it advisable that the same medical school shall undertake to furnish such different courses as to provide for all wants — to offer to meet the minimum requirements for the degree of Doctor of Medicine, as well as the wants of those who demand more advanced and detailed instruction? The answer to this depends largely on the location of the school, and on the means which it can command, especially as regards facilities for hospital and clinical instruction. In any case, its diploma of Doctor of Medicine should have an uniform value, and if it does undertake the double function, the higher education must be largely post-graduate work. It must also be, to a great extent, a voluntary matter on the part of both schools and students.

As indicated at the beginning, this address is not intended to criticise existing medical institutions, or to give specific advice to any college or university. I have simply tried to formulate roughly what seems to be the present ideal of a course of medical education in the minds of many physicians, and then to show what the carrying out of this ideal involves to the schools and to the students.

I believe in ideals, that is, in their beauty and in their utility when they do not dominate a man so as to make him a visionary, or a dangerous crank or fanatic; but one ideal is often more or less incompatible with another, and all of them must be held subject to the possibilities afforded by surrounding circumstances. But we must not be too sceptical about these possibilities. And we are all directly interested in this matter, every one of us. Every one of this audience will probably see the time when the knowledge and skill of the physician called in to advise in the calamity which has fallen on him or his wife or child will seem to him of vast importance.

Sometimes he can select his physician, often he cannot, but must rely on the first one who can be found. Hence these discussions about medical education, although chiefly carried on by physicians, because they are most familiar with the difficulties of the subject, should be considered by those who are not physicians quite as much as by those who are, or intend to be. It is a dangerous business, however, for a doctor to discuss other doctors in public. He can make more trouble for himself in less time in this way than by almost any other method that I know of. Nevertheless, it is my duty to tell you that there is little probability that the ideal facilities for higher medical education, either here or elsewhere, will be furnished by the doctors themselves. There are several reasons for this, but one is sufficient, and that is, they have not got the money, which I have shown you is necessary to provide and maintain these facilities. Hence, if these ideals are to be realized, the means must be furnished by those who are not members of the medical profession, and it seems to me that this is what will be done.

What is the best way for a university, a real university, to begin this line of work? In most cases I should say by establishing one department at a time on a proper basis. Which departments should be the first to be thus established? Just here is where many of the doctors will begin to differ.

I should say that the first of these departments to be provided for are two which will form the main links in the university bond between the medical and other departments, — covering two branches of knowledge which every university graduate should study somewhat, namely, biology and hygiene. For the clergyman, the teacher, the journalist, and the sociologist, systematic instruction in these two branches is as desirable as it is for the physician — for the lawyer it will be useful — only the philologist would I excuse entirely from these departments.

Of course, in specifying that they are to teach, and to teach under-graduates, I do not mean that teaching is to be their sole function. This is not the modern idea of a scientific department of a true university. It is to increase knowledge as well, to provide for the needs of special investigators and seekers who have obtained their elementary training elsewhere.

Let the plans for such a department be well thought out, the expenses carefully estimated, and then bring the matter to the attention of those who have the means to realize this ideal, and sooner or later it certainly will be realized. I have elsewhere ventured to express my sympathy for two classes of men who have in all ages and in all countries received much disapprobation from philosophers, essayists and reformers, namely, rich men and those who want to be rich.

So far as the wealthy are concerned, there seem to be a good many of them in these latter days who use their stored force to endow universities and professorships, to build libraries and laboratories, and to such let us give due praise and honor.

They may not be scientific men, but they make scientific men possible. The unscientific mind has been defined as one which is willing to accept and give opinions without subjecting them to rigid tests. "This is the kind of mind which most of us share with our neighbors. It is because we give and accept opinions without subjecting them to rigid tests" that the sermons of clergymen, the advice of lawyers, and the prescriptions of physicians have a market value. The unscientific public has its uses,[3] and one of its characteristics is a liking for ideals, some of which it occasionally helps to realize. I can only hope that whenever an American university approves the ideal which I have roughly sketched, this public will see that the means are provided for carrying it out. It may be objected by some that it would be better to help to raise the average standard by endowing chairs in the medical schools in large cities, than to provide special facilities for the use of a limited number. It is quite true that all medical schools should be endowed; and this is coming, for voluntary associations of physicians, who are not a wealthy class, cannot afford to compete with endowed schools when State laws shall come to enforce a high standard of acquirements. Nevertheless, we need universities properly so called, as well as colleges and higher schools, and we need university men in the medical profession as well as elsewhere.

I have no fears as to the creation of a medical aristocracy by giving facilities for higher education to those who have the means to avail themselves of them. It is quite true that only a fraction of those who have the means will use these facilities properly, and that there will be a number who have not the means who would make good use of such facilities if they could get them; but these last will not be helped by the

[3] Scientific Men and their Duties, by J. S. Billings, Washington, 1886.

total absence of such facilities for anybody. Let us try to give the best minds a chance to obtain the best training, let us try to discover these best minds wherever they may be, and if their owners have not the means to avail themselves of training, let us try to furnish the means. But to do this, one of the first and most essential steps is to provide somewhere the teachers, and the buildings and apparatus, necessary for giving such instruction, and where is a better place to do this than in connection with an university? or, if you please, in connection with this University?

PHYSICAL EDUCATION.[1]

BY WALTER CHANNING, M.D.

I SUPPOSE there is no one who is more conscious that some terrible mistake has been made in our system of civilization than the physician engaged in the treatment of the insane.

Whenever he looks at the noble men and women, and the children of other noble men and women, who are hopeless mental wrecks, never to be any better, and destined to descend into a state, essentially animal in character, he is startled and shocked, and feels almost impelled to say: "Here is the real fall of man, here is man become beast!"

To me the cause of this degeneracy never became fully apparent, until my attention was directed toward "physical education." Then the scales fell from my eyes, and I found the explanation wide and deep to be sure, but still a fairly satisfactory explanation, resting on a perfectly rational basis.

In the first place, I found the doctrine of evolution was of great assistance in solving the problem. This showed me man, beginning as the slightest possible sentient unit, slowly and by almost imperceptible steps, developing from a creature with a simple uniform structure, to one with a complex, multiple structure. First, with a nervous system like that of very low animals, then by slow stages, after thousands of years, reaching the highest point of development, so far.

I also saw further, which impressed me with the nearness of man to the animals, that each human being before birth possesses a fundamental likeness to different animal forms.

Here I was brought face to face with the fact that man is physically essentially animal and equally dependent for further growth on physical laws. Obey these laws, and growth would continue; disobey them and it would be interfered with, and finally stopped.

And what has happened? Is it not true that the body has been treated like a watch or a special piece of mechanism, to use an illustration of Fiske, created for a special purpose and not like a flower, a plastic organism of slow growth, slowly adapting itself to its surroundings?

Nature works slowly and thinks little of centuries, but is inexorable in the end. Is it not true that the nervous mechanism, the mental side of man, has been subjected to a process of forcing, perhaps for centuries, which is only just beginning to be felt?

The body, the plastic organism, has been neglected during all these centuries, and at last, as an incident, in what I believe to be a pushing or reaching upward to a still higher state of existence, a temporary breakdown, a lack of harmony with, a want of adjustment to, the environment, asserts itself.

Just here it is well to remember the immense importance of heredity. An English writer[2] has well said: "The stability or instability of a person's highest nervous arrangements, depends primarily and chiefly on inheritance. Every man is the outcome and product of his ancestry . . . the small amount of new character that circumstances can produce in any individual in comparison with the character transmitted to him by his ancestry, may be gathered from the length of time that circumstances can act on him, in comparison with the aggregate length of time during which the long line of his ancestry have been subject to modification by circumstances."

We are suffering now from the effects of mistakes made by our ancestors for unknown centuries. Physical instability of certain kinds has resulted. Correct these mistakes along properly indicated lines, and in the end we shall see healthy growth, where now we see threatened decay.

What is the brain? An immense double organ of nervous centres made up of millions of cells, receiving primarily their whole knowledge of existence through the muscular structure, and retaining this knowledge, not only for its own use, but for that of succeeding generations. Systems of education, forms of government, social institutions, are the outgrowth of temporary needs, and can be both established and destroyed arbitrarily, they are not a vital, organic part of *life*. But every movement of a muscle, every tremor of a nerve fibre, every shock of a brain cell, has a fixed, definite, organic value, which has a bearing on the health and growth of the human organism.

We cannot afford to forget or lose sight of the fact that through muscular movement and effort man has struggled to his present preëminence. But we also cannot afford to forget that this preëminence has been reached by a sacrifice, through ignorance of a certain amount of the vitality and strength of the organism itself.

Our steps must be retraced or turned in a new direction, until the external impression, and the internal expression are mutually adjustible and convertible.

Finally, it is to the cumulative and transmitted effects of physical education on future generations that we are to look, in applying methods now. The more nearly adapted naturally to the organism, the more in keeping with the laws of its growth and development, the more valuable will be the final results.

[1] Address to the Graduating Class, Boston Normal School of Gymnastics, June 4, 1891.

HONORS TO MEDICAL MEN. — When they want to honor medical men in the monarchies of Europe, they present them with different orders, generally of some bird. We notice, for instance, that the practising physician and health counsellor Schmidtborn, of Saarbrücken has been given the red eagle order of the fourth class. But imagine the feelings of a doctor on receiving such honors as this: "His Majesty, the King, has been most graciously pleased to give his most august permission that the staff surgeon, Dr. Brunhoff, shall wear the Mecklenburg grand ducal house order of the Vandal crown, the Medschidje order of the third class of the Turkish grand-signior, and the commander cross of the royal Portuguese military order of the conception of our beloved lady of Villa Viçosa."

[2] Charles Mercier.

Original Articles.

PRELIMINARY REPORT ON THE CLINICAL USE OF TUBERCULIN.[1]

BY HAROLD C. ERNST, M.D.,
Instructor in Bacteriology at the Harvard Medical School.

I SHALL endeavor to give a short review of the cases that I have had under treatment with Koch's material during the last four months, without in any way feeling that the conclusions that may be reached this evening are final.

For the opportunity to make the observations here recorded, and the cases upon which they are based, I am indebted to the staff of the Massachusetts General Hospital, of the Boston City Hospital, and of the Children's Hospital. And for the records, both of the cases and the microscopic examinations, my most hearty thanks are due to the various gentlemen who have assisted me all the time that the work has been going on. To attempt to name every one who has helped, would make too long a catalogue of names; and I hope that these gentlemen, even though not specifically mentioned, will feel that any success that may be given to this preliminary report is in large part due to their efforts.

The cases that have been treated or examined at least once, number fifty-two, and include all varieties of tuberculosis, from the simple and uncomplicated form of pulmonary disease, to extensive affections of the skin and joints. As they will be published, they will be divided into: (1) Pulmonary, either uncomplicated or with minor affections of the other parts of the body (this class numbering twelve); (2) surgical, — including, for convenience sake, the two cases of lupus that have been under my care, as well as all other forms of this class of tuberculosis (these number twenty-two); (3) those cases that have been treated in the first place for diagnosis (which number eight); (4) the cases that have been under observation for too short a time to make the record of value as regards the point we are trying to establish. This last class also includes the records of three cases that were refused treatment for various reasons; for it would seem to be a matter of interest to show why this treatment should be refused, as well as why it should be given.

In every case the observations have been made as carefully as possible, and the records are as full as circumstances would allow. There is not absolute uniformity in this respect, for the reason that it was not possible to obtain force enough for the complete daily carrying out of all of the observations. At the Massachusetts Hospital I had the assistance of Dr. A. K. Stone, for a part of the time; and at the City Hospital, Drs. Arnold and Fay did as much as their other duties would allow in helping on the work. Throughout the whole time, Dr. Henry Jackson has looked after the microscopic work with the most untiring energy and faithfulness.

Except where especially stated, no other treatment has been employed whilst the injections have been going on. Where it was possible, fresh sputum-cups were employed; new ones being supplied twice a day, and the old ones (of paper) being burnt after the specimens were obtained for the microscope. In all cases of microscopic observation, absolutely new and unused cover-glasses and slides were used; and all the microscopic work was done at my laboratory at the Harvard Medical School. In cases of any doubt as to the appearances, the specimens were submitted to me, but the record will show who was responsible for the actual examination.

The object has been throughout, to obtain as accurate an observation of what the material will do as could be reached with the cases at command.

Before going any further in the account of what has been accomplished, it would seem to be as well now as any time to speak of the possible dangers that may arise from the employment of tuberculin, the fear of which has taken such a hold upon many minds. And first, as coming from the greatest pathologist of the age, the utterances of Virchow. Dr. Jackson has been good enough to collate this author's published statements for me, and they are given as follows, including also the remarks of one or two others: (1) Israel[2] inoculated a rabbit in the eye with pus and a bit of tissue removed by operation from a case that had been treated with tuberculin for five weeks. Bacilli were found in the tissue under the microscope, and tubercle developed in the eye; thus showing that the treatment does not destroy the bacilli. (2) Virchow[3] gives the result of twenty-one autopsies on cases subjected to the treatment up to January 1, 1891, as well as six afterwards, and also speaks of a number of similar cases examined by his assistants, of which he had seen the principal organs. Of the twenty-one cases, sixteen were phthisis in the narrow sense; that is to say, the principal lesion was in the lung. In all sixteen cases, ulcerative processes of greater or less extent were found; in fact, these cases belonged to true consumption (Schwindsucht.) "I give no details of the cases, only general remarks. As in external parts the chief manifestations of the injections are represented by acute inflammation with marked redness and swelling, so I find the same thing in the internal organs."

Virchow demonstrated one specimen as a perfect example, — the brain and membranes from a case of acute tubercular meningitis. In the lungs were found old tubercular processes, which furnished the starting-point for the acute processes. There had been four injections, the last sixteen hours before death; in all, there was used .002 of the material. There was an enormous (*kolossale*) hyperæmia of the pia, as well as of the brain substance itself, "such as I do not remember ever to have seen before." Virchow himself examined the tubercles, and did not find any change suggestive of a retrograde process; the tubercles presented the characteristics usually observed.

Similar acute hyperæmias and swellings were observed in other internal organs; several times hæmorrhagic infiltration of the walls of the cavities, and even fresh hæmorrhages in the cavities. These processes were not simple hyperæmic swelling; but it was easily demonstrated that inflammatory processes, with actual tissue growth, had taken place. The lymph glands were swollen to an unusual degree. Such swellings as these may at times assume a dangerous character, as in ulcerations about the throat. In the cases of ulcerative phthisis, the larger number showed fresh processes of considerable size, especially in the lungs; usually also, pleurisy at the same time, simple or tuberculous, and not seldom double.

[1] Read before the Boston Society for Medical Improvement, May 11, 1891.

[2] Berl. Klin. Woch., January 5, 1891.

[3] Berl. Klin. Woch., January 12, 1891.

The changes in the lungs may be divided into two classes; (1) Cheesy pneumonia, or, anatomically, cheesy hepatization. "In these cases, doubt may be felt whether the cheesy hepatization had anything to do with the injection. I myself should throw out any such connection, except that a few of these cases have a special significance. Example: A lung was demonstrated with very numerous cheesy masses all through the lower lobes. The lung substance between the cheesy masses was infiltrated with blood and leucocytes. The specimen came from a man thirty-three years of age; there had been six injections, the last four weeks before death. The injections were stopped on account of continuous fever and infiltration of both lower lobes, which did not clear up. The infiltration came on after the injections were begun, as at first there was only induration at one apex. Several cases were noted, but none so marked as this. (2) Pneumonia, similar to catarrhal. Virchow remarked that he could not precisely define how these cases of pneumonia differed from the usual catarrhal pneumonia, but the chief difference was that the material pressed out from the alveoli was watery and cloudy, suggesting rather a phlegmonous condition.

"As to the other observations, a condition was found which must be tested by a number of clinical cases carefully studied; and that is the occurrence of fresh tubercles. I do not speak of small tubercles whose age we cannot estimate, but of submiliary nodules, of whose age we can speak with certainty. I can say that I have observed in internal organs and in those that I consider the most reliable for the observation of these fresh forms, that is, serous membranes, the eruption of absolutely fresh submiliary tubercle under conditions which rendered it hardly likely that they were of any considerable age." There was no evidence presented of any degeneration of fresh tubercle; and Virchow throughout his paper, lays especial emphasis upon the fact that small and submiliary tubercles — those not already degenerated — presented no change secondary to the injections with tuberculin. He goes on to say: "As to the origin of these new eruptions, the question must for the time be set aside. However, I would remark, that if we consider that all tubercles are produced by bacilli, we should pay especial attention to tubercles situated at a point remote from the original focus of the disease, as for instance the pleura." A small tuberculous patch on the epicardium was shown, situated at a distance from the affected part of the lung, where no contact was possible." There was here no possibility of infection except by a metastatic process. Why should not we think of a metastatic process, and allow the expression of the suspicion as to whether the bacilli had not been rendered mobile, whether they had not been spread through the body in the path of infection (*Auf dem Wege der Infection*)? . . . The bacilli are not destroyed by the treatment (as declared by Koch and demonstrated by Virchow), so that the possibility cannot be denied that when a softening occurs in any place, which renders the detritus (*Zerfallsproducte*) more fluid, or at least more movable, these bodies (the bacilli) may also be swept along, and produce new patches in other places. . . . Another question arises when, under injection, a whole lower lobe becomes filled with patches of cheesy pneumonia, whether the cheesy material in the upper lobe has not been loosened; very likely aspirated into the lungs; and so produced a form of 'feeding pneumonia' (*Schluck-pneumonie*)."

Virchow seemed to be especially impressed with the absence of all change in submiliary tubercles, and often in those of a larger size. He also warned against the use of the injections in people who were so far reduced, that they were unable to remove by cough and expectoration any cheesy and loosened masses.

All of the results that are spoken of by Virchow, are those that would suggest themselves to one who was familiar with the subject, and indicate the caution with which the material should be used. The necessity for this had impressed itself upon my mind before I had seen much of its action or many cases in Berlin; and so much so, that from the first, I have pursued the plan of using smaller doses, and not in any case attempting to reach those of the excessive size that are sometimes quoted. The choice seems to lie before us of securing a violent reaction and possible benefit in cases that are strong enough to bear it, or attempting to attain the same end, of benefit to the patients, with smaller doses, and these spread over a longer time. Pursuing this latter course, I have had no deaths that are in the least fairly attributed to the treatment; one of the two that are recorded being due to an intercurrent attack of pleurisy, and the other distinctly a death from exhaustion, the case being desperate from the first. On the other hand, although I have no case of cure to report (and any such case reported at present must be received with scepticism), the percentages of cases that seem more or less better after the treatment (whether simply after it or on account of it, is still an open question), are about the same as those reported from Germany.

The next point that has aroused alarm, is the statement coming from Liebmann, of Trieste, that he had found bacilli of tuberculosis in the blood of many of his patients after treatment with tuberculin, and not at other times or in other cases. Of course, if this were true, it would be a most crushing piece of evidence against the safety of the method and the wisdom of those who employed it. There is fortunately an article[4] that is suggestive, to say the least, upon this point. I give, as nearly as possible, a literal translation of it. It is a report of a meeting of the Berlin Medical Society:

"Herr Kossel reports the result of the examination of a preparation of blood that was sent from Herr Liebmann (in Trieste) to Professor Ehrlich. The preparation contains, besides blood-corpuscles, bacilli of tuberculosis in such great numbers, that, if one should draw from these a conclusion as to the number circulating in the blood, it would be a question of millions. It may, therefore, be difficult to see why a report of severe illness was not made in regard to the patient of Herr Liebmann. Furthermore, masses of three and more bacilli are found in the preparation. Such formation occurs in masses of dead material and bacilli, when they stagnate for a long time; in the circulating blood a like occurrence is improbable. Finally, it seems as if the preparation was dirty, and the bacilli were always in proximity to such masses of dirt. As one is not justified in doubting the statements of Herr Liebmann upon a single preparation, he was asked to send more, which request he complied with. In seven other specimens, also, it was

[4] Deut. Med. Woch., March 19, 1891.

conspicuous that the bacilli lay mostly near the edge of the cover-glass, and it was conjectured that these did not originate in the blood. The proof of this was manifest, since in one place, the remains of sputum containing bacilli were found. Also, in several other preparations places were found later, which were absolutely unmistakable as the remains of secretion. The statement was confirmed by Herren P. Guttmann, Ehrlich and Kitasato. Probably through an unfortunate accident, cover-glasses were used which had served before for sputum examinations, and which were not sufficiently cleaned. Herr Liebmann, to whom this report was communicated, insisted that he had found bacilli in new preparations which were made upon absolutely clean cover-glasses. In the City Hospital Moabit, nine cases further were examined with precise following of the methods of Herr Liebmann, with uniformly negative results."

Comment upon this communication is hardly necessary, the more especially as no other observer has reported any results at all to confirm Liebmann's assertions.

Similar examinations were, however, made of the blood of sixteen of the cases I have had under observation, and, after a very varying length of treatment, with absolutely negative results. All the examinations were made the day after an injection and in the following cases: No. 1, seven weeks after the beginning of treatment; No. 2, six weeks after; No. 3, the same; No. 4, the same; No. 8, five weeks after; No. 8, four weeks after; No. 12, three examinations, one week, four weeks and five weeks after; No. 22, four weeks after; No. 32, four weeks after; No. 25, seven weeks after; No. 30, five weeks after; No. 49, one week after; a case of Dr. Beach's, seven weeks after, and one other.

The results of such examinations seems to make it fairly certain that such an accident as that under consideration, has at any rate, never yet been actually traced.

This exceedingly brief consideration of the dangers of the method brings us at once to the consideration of the cases I have to report. I wish to state as distinctly as possible at the very outset, that the conclusions presented are but preliminary, as they must be at the best; and that I should feel at perfect liberty, cause being given, to change my opinion of any individual case tomorrow. I can only give the results as based upon the condition of the patient at the last time that he was seen.

The classification of the cases is also imperfect. I give them as cases treated with tuberculin; and the diagnosis of tuberculosis I do not consider settled in any of them in which the bacilli of that disease have not been demonstrated. This, of course, may at times bring up a conflict of opinion from the clinical point of view; but one of the lessons that we must learn from the sort of investigation of which this is a part, is a closer and more exact diagnosis, as based upon modern methods.

(To be continued.)

A TELEGRAM from Simla contains an announcement which points to a distinct advance in the bacteriology of leprosy, due to the researches of the members of the Leprosy Commission. It is to the effect that Drs. Rake and Buckmaster have succeeded in cultivating the leprosy bacillus in serum.

TWO CASES OF SYPHILIS.[1]

BY W. F. TEMPLE, M.D.

KATE M., age twenty-four, single. Family history good. Of her previous history could learn nothing with the exception of diseases of childhood. At the time of first consultation complained of dysmenorrhœa, from which she had never suffered before last period.

On March 11, 1885, was summoned to her house, when the following symptoms were noted: Considerable prostration, pain in back, headache, difficulty of deglutition. These she had been suffering from for three or four days previously. On examination the tongue was found to be coated, and the whole pharynx red and swollen; externally the tonsils were noticed as much enlarged. Heart and lungs normal. Temperature 101°, pulse 90.

March 18th. For past week has been growing steadily worse. Tonsils very much swollen. Two cold-sores, size of little finger-nail, have been noticed for the past two days; one on upper lip to right of median line, the other on the lower lip to the left of median line. To-day, for the first time, left sub-maxillary gland enlarged. Cold-sores more carefully examined. The one on the upper lip had the appearance of an ordinary herpes labialis. That on the lower lip had more of the characteristics of a small tumor; the base was not indurated; edges thin and irregular; the size that of a silver five-cent-piece; covered with a thin pus. Just anterior and to the left of soft patch was a sharply defined ulcer, size of little finger-nail. Probe passed a quarter of an inch and came down upon denuded bone. (Iodoform and cleanliness.)

March 20th. Much the same condition as at time of last visit. Anæmia increasing; sub-maxillary gland more swollen (tonics). Temperature ranged from 99° to 101°, and pulse from 90 to 95, during past ten days.

March 23d. Crust over both cold-sores. Ulcer of same character as that recorded on the 18th, noticed to right and anterior to soft palate, though not so deep. Throat very much swollen; mucous membrane dark red in color; tonsils projecting markedly. Left sub-maxillary gland much enlarged, tense, reddened, indistinct fluctuation. (Cleanliness and iodoform.)

March 26th. Condition unchanged with exception of sub-maxillary gland, which has become more swollen; distinct fluctuation. Etherized and gland opened, discharging about one-half teaspoonful of thick pus. (Poulticed.)

March 27th. Very uncomfortable, restless night. Throat less red; ulcers on hard palate healing. Gland opened yesterday discharged somewhat freely during night.

April 1st. Throat better; complains of headache; cold-sores almost well; more appetite. (Tonics.)

April 4th. Throat still improving. Temperature and pulse normal. Continued to improve for four or five days, but on April 12th the combination recorded is languor; muscular pain in back, arms, legs and thighs; cold-sore on lower lip healed, the one on upper lip still present, indurated; throat still red.

April 15th. Decidedly worse. Temperature 102°, pulse 110. Complains of severe headache.

April 18th. Occipital glands still enlarged. Few scattered papules over entire body, most numerous

[1] Read before the Boston Society for Medical Observation, March, 1891.

over back. General condition unimproved. Corrosive sublimate, one-thirtieth of a grain every four hours.

April 21st. Still much headache. Febrile condition continues. Dr. Post saw the case in consultation, and advised pushing treatment.

April 23d. Saw case for last time to-day. Family dissatisfied. From the physician who superseded me, learned that the case under treatment gradually improved.

My diagnosis was chancroids of lips and throat. Bubo of sub-maxillary gland and primary syphilis.

The ethical questions arising from a case of syphilis may be very perplexing, in this case the mother forming an opinion, the family eagerly supporting her, the patient wholly unconscious of her dreadful malady; their conclusion is formed at once as soon as the disease is made known to them, for the young lady is engaged, the only possible way for them to look at the case is that the disease is a gift of a lover's kiss, they reject the possible chance of its being due to an entirely different source, and should you accuse or allow him to be accused by the family unjustly, nothing could atone for such a step. The plan was, when sure of the diagnosis, to have quietly told the patient, to have questioned the lover, and helped them keep their secret. My successor at once announced the source of the trouble and its probable cause to the family, thus gaining their esteem and possibly doing one man a great wrong. Review of our cases is always a useful study; in this, my course was such as to cause no regret.

From a medical point of view the case is instructive from the fact that the true initial lesion occurred on the same base as the chancroid, also that the eruption, which was papular, was not of the character which usually ushers in the syphilides; both of these conditions though occurring, are by no means common. The primary lesion showing itself in the location that it did in this case, made the diagnosis more cautious and difficult to make.

One point in the treatment: we are not justified, according to my way of thinking, in beginning specific treatment until secondary symptoms appear: this we were taught, and mature consideration leads me to give perfect assent to the teaching. Keep the chancre clean and defer other than tonic treatment until perfectly sure of the diagnosis.

CASE II. M. E., age thirty-five, grass widow. Family history good. Previous history good. Has been sick for four or five weeks with what was called slow fever. At time of this visit, November 23, 1885, the following record was made: Morning and evening temperature the same, 100°, pulse 94; dull aching pain in back and thighs.

November 25th. Both knees and ankles red, swollen and painful. (Five grains of salicylate of soda every hour.) Temperature 102°, pulse 96.

November 26th. Pain not so severe; otherwise record same as yesterday.

December 1st. Joints not quite so painful; right eye painful; photophobia; slight conjunctivitis; pain also in supra-orbital and infra-orbital regions. A prominent oculist saw the case with me, and advised pushing the salicylate of soda (ten grains every hour), solution of atropia (1–100), and dark room.

December 3d. Very little change; pain in joints still continues; eye symptoms somewhat relieved. (Five grains of salicylate every hour.)

December 11th. For past week has been at times more comfortable, though pain has still continued in joints. Last night very restless; severe pain, lancinating in character, in back, thighs, and back of head; urine normal. Salicylate discontinued. Treatment expectant.

December 14th. Throat somewhat sore; other symptoms not much improved. Delirious during the night; has strange fancies this morning, though is not violent as she is said to have been during the night. Eye in much the same condition as a week ago, with exception of conjunctiva, which is much inflamed. Atropia has been continued. Pupil large, evenly dilated. Few small papules (rose-colored) noticed on face, hands and back. (One thirty-second of a grain of corrosive sublimate every two hours, ten grains of iodide of potassium t. i. d.)

December 15th. Much worse; has been wholly without reason for the past twenty-four hours. Requires to be constantly watched to keep her in bed; has strange fancies; hears voices; continual muttering.

December 18th. Papules increasing in number and size. Condition of eye somewhat improved. Has Has been delirious for most of the time for past three days, occasionally wildly so, oftener of a dull, muttering character, at times seems to know when spoken to, but imagines that she is away from home.

December 20th. Somewhat improved; severe headache at nights noticed when conscious; eye much improved; delirious most of the time, but not wildly so. Dr. George H. Tilden saw the case in consultation, and by his advice inunctions of mercurial ointment were given. Iodide of potassium rapidly pushed up to one and a half drachms t. i. d.

December 24th. Very much improved; free from headache for past twelve hours; complains of sense of fulness in ear; tinnitus aurium; right drum dull red color (no bulging); course of vessels could be plainly seen; gums red and tender. (Chlorate of potash mouth wash, omitted mercury.)

December 29th. Continues to improve. Has been about the house for past two days. Eye very much improved; can stand the light; has been comparatively free from headache.

I would say, in closing the history of the case, that she was under my observation for three years; that when last seen she had been entirely free from any symptoms for six months, though she fully understood the value of iodide of potassium, and always kept it as a possible need in the house.

Syphilis may simulate almost any disease so perfectly as to mislead the most careful clinical observer.

Dr. Duncan Bulkley, in an article read before the New York State Medical Society, reports observations on four hundred and fifty cases, with the following results: Neuralgia was noted as a special symptom in nineteen cases; sciatica, apparently due to syphilis, in five cases; headache caused by syphilis in twenty cases; in one very striking case dementia was caused by this disease, which yielded very rapidly and perfectly to anti-syphilitic treatment. Rheumatism was recorded as occurring thirty times; bursitis in five cases. There were twenty-three cases of eye lesions due to syphilis, mostly iritis. Epilepsy is once recorded. In twenty-nine cases alopecia formed a striking feature. Six deaths are recorded as due to syphilis.

In our case the symptoms were in the onset such as to justify one in making a diagnosis of acute rheumatism.

During the past few years much attention has been paid to cerebral syphilis; for myself and the happy result in this case, the aid given by Dr. F. B. Greenough is cheerfully acknowledged, as it was the help received from an article of his, published in the *Boston Medical and Surgical Journal*, June 11–18, 1885, that the case was made clear. He reports five cases of cerebral symptoms, with early syphilis. In these five cases headache was a prominent premonitory symptom, and moreover, headache having certain well-marked and definite characteristics, such as a decided tendency to exacerbations towards evening, its severity, and its very quick yielding to the administration of iodide of potash. Dr. Greenough says: "I have seen many cases that I am convinced would have resulted in cerebral trouble had they not been recognized and treated." This would have been the result in the case reported.

The rarity of cerebral symptoms with the early manifestation of syphilis is acknowledged by writers on this subject. In this respect our case is interesting, as well as from the fact that the severe headache with nocturnal exacerbations, together with the marked delirium, antedated the appearance of the eruption; and when the papules began to show themselves, in fact, throughout the course of the disease, they were very few in number, and might have been overlooked as syphilitic, had it not been for the severe cerebral symptoms. In this fact of being the indicator of syphilitic trouble, rather than indicated as of syphilitic origin by the eruption, the case is peculiar.

Dr. Denslow reports, in the *North-western Lancet* for May 1, 1885, four cases of persistent headache in early syphilis, in all of which the phenomena were observed within six months from the appearance of the primary lesion. Of course, the diagnosis is very much easier in those cases where the symptoms of constitutional infection are present, or so shortly afterward that the fact of the patient's having recently had syphilis cannot be ignored. One interesting point in Dr. Denslow's paper was the fact that in one case where treatment had been neglected complete hemiplegia, with aphasia, came on, which freely yielded to anti-syphilitic treatment.

One word only on treatment. The advice of Sturgis is very true. He says, in giving both mercury and iodide of potash, "Watch your patient well, to obviate the occurrence of toxical symptoms, and do not hesitate to use either one or both remedies in sufficient amount to dispel the symptoms, no matter what the requisite dose may be." This is especially true in regard to the use of iodide in those cases with cerebral symptoms, where the small doses fail wholly, when by pushing the dose to sixty, to eighty or one hundred grains, happy results are obtained.

Influenza in London. — There seems to be a marked decline in the fatality of influenza in London. The deaths directly referred to this disease, which had been 319, 310, and 303 in the preceding three weeks, further declined to 249 during the week ending June 13th. In addition to these 249 deaths, there were 49 cases in which influenza was certified to have occurred in the course of other diseases.

CLINICAL ASPECTS OF INFLUENZA FROM A COMPARATIVE STANDPOINT.

BY KENELM WINSLOW, M.D.
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In presenting this brief sketch the writer trusts that he is not trespassing upon the already tried patience of a long-suffering and much-enduring medical profession. The only excuse is the comparative point of view.

A survey of the field as exhibited by the manifestations of *la grippe* in the lower animals, more especially the horse, may throw some side-lights on the general clinical picture of this disease.

Influenza is one of the common disorders to which the horse is subject, perhaps the most frequent, more particularly in the cities. The reason for this great prevalence is that influenza in horses is both enzoötic and epizoötic.

Etiology. — The causation of the malady is as vague and uncertain as it is in man. Moreover, it is still unsettled as to whether the disease is contagious or infectious or both. On the one hand, cases have developed on shipboard where a sufficient time had elapsed to apparently preclude the possibility of contagion; on the other hand, it is a most patent fact that the germs of the affection hang about and infest certain localities, so much so, that when a young animal is introduced into such places, an invasion is well-nigh inevitable. It may be added that inoculation and transfusion of blood from the diseased animal to the healthy have thus far failed in reproducing influenza.

Poorly ventilated and crowded city stables, where the disease has long had a foothold, are the favorite resorts in which horses most readily develop the disorder. This is, indeed, so well recognized that many city dealers have an out-of-town establishment in connection with their business in which they place green horses, that is, young animals brought from the country.

The constitutional disturbances which horses suffer on being transferred from one part of the country to another, and more especially from the vicinity in which they are bred to the city, known as acclimatization, is usually nothing but influenza, that is, where the trouble amounts to anything more than a slight cold. The period of incubation appears to be from five days to a week.

It will, therefore, be seen that influenza in horses differs from that in human kind in being always with us. It is, however, particularly common during spring and autumn, and more often occurs in the unfavorable surroundings alluded to above, rather than in the better hygienic circumstances of well-ventilated quarters and in the purer air of the country.

Young animals are the most frequent sufferers. Whether this is because they are the most susceptible, which seems probable, or because they are then for the first time made liable to the disease, through transportation for sale and subjection to the prejudical conditions heretofore noted, cannot be fully determined. But it is generally conceded that the older the animal the less likely is the disease to become contracted, not only because an earlier attack has perhaps secured a certain degree of immunity, but because the more aged become the less susceptible. In general the weak, overfed and overfat are rendered more sensitive to the disease.

Influenza likewise occurs in the lower animals, as

we have said, in the epizoötic form, and its severity then is much increased. The earliest authenticated plague of this description took place at the beginning of the fourteenth century, and since then it has made its appearance in widespread and violent outbreaks at irregular intervals.

The last epizoötic is fresh in the minds of our readers, when in 1870–72 it extended from Canada southward, and then spreading out, east and west, ravaged the entire country. In some of these epizoötics other animals than horses have been attacked, notably dogs, and even poultry have been reported to have suffered.

It is rather curious, in this connection, that epidemics occurring synchronously among human beings have been rarely observed. It is related, nevertheless, that an epizoötic in England in 1776 was followed by an epidemic of a like nature among men. Apropos of this consideration, influenza among the lower animals has not been remarkably prevalent during the recent and prevailing scourge of *la grippe* in man.

Clinical Features. — There is much resemblance between influenza as seen in human medicine and as observed in the horse, and yet some differences. In the latter animal the attack is often ushered in suddenly by visible rigors, loss of appetite, cough, and mucous discharge from the nostrils and eyes. The severe frontal headache of human beings is probably absent in horses, as symptoms of head trouble manifested by "boring" the head, as rubbing the occiput against the sides of the stall is called, are not observed; neither is the presence of pain in the back noticed in horses, but Prof. C. P. Lyman, of the Harvard Veterinary Hospital, has frequently noted pain in the limbs as among the earlier symptoms. The absence of suffering may be explained from the fact that neuralgic affections are almost unknown in veterinary practice. The temperature (normally 100° in the horse) rises to 102°, 104°, or even 106°; the pulse (normally 36 to 40 pulsations per minute) becomes 60 to 80, and is weak and easily compressible. The respirations (normally 12 to 18) reach 30 to 40 to the minute. A peculiar feature of the disease is the salmon color taken on by the visible buccal, Schneiderian and conjunctival mucous membranes which is almost pathognomonic.

The disorder is as prostrating in character, and more apt to become complicated than in man. Especially in epizoötics do many animals die from exhaustion and "heart-failure." After the first invasion the symptoms usually increase in intensity for two or three days. The discharge from the nostrils and eyes becomes more profuse; the cough increases; the animal is stupid and weak, stands with the head depressed in a listless way, and when moved sways about in an unsteady manner. The throat is often sore; swallowing is difficult, and causes coughing, and the patient regurgitates food and water through the nose; there is considerable thirst, anorexia and constipation.

The period of maximum intensity, following that of invasion, is maintained for about four days, when the fever and other symptoms abate gradually, and convalescence sets in. Great prostration follows a decline of the acute attack, and is often accompanied by œdema of the tissue about the under surface of the belly, the sheath of the penis and the legs.

Résumé. — Influenza, then, in the horse, resembles that affection in man, in that the local symptoms are out of proportion to the great systemic disturbance, or in other words, it is an essential fever with local manifestations. It is, however, enzoötic, and in that way differs materially from the affection among human subjects, where a case apparently influenza would be discountenanced as such if it should occur sporadically.

The neuralgic symptoms in the horse, as we have seen, are much less prominent. The duration of an attack is about the same; but the liability of healthy young subjects to dangerous complications is considerably greater than is observed in the same description of human patients.

Although there is a certain immunity established by a prior attack, yet if an animal be worn out and run down, especially during epizoötics, there is great likelihood of a recurrence.

Good, strong animals rarely succumb, save by complications.

Predisposition to other affections and permanent after-effects, so often following the human malady, rarely are seen in veterinary medicine. The complications are numerous and dangerous in the horse. Briefly they are: Severe conjunctivitis, often purulent, where it is termed "pink-eye"; acute laryngitis, frequently demanding tracheotomy; swelling, and often suppuration of the sub-maxillary and parotid glands; bronchitis; pneumonia, the most common fatal complication, of an asthenic type; pleuritis; rheumatoid affections, attended with great swelling, difficulty of motion and pain in the joints; digestive disturbances, evinced by constipation, jaundice, colicky pains; and not rarely, diarrhœa, which not infrequently proves irremediable; congestion of the brain; congestion of the laminæ of the feet; and not uncommonly endo- and peri-carditis, with its attendant results and fatality.

There are other rarer complications and sequelæ, but the preceding are the more common.

Treatment. — The one remedy that is generally held in most esteem, and properly so, is quinine, given in doses of from fifteen to thirty grains, in conjunction with stimulants, diaphoretics, etc. One of the best of the latter is spirits ætheris nitrosi, administered in one-ounce to two-ounce doses, and is a very favorite medicament. Inhalations of acetous vapors and the addition of about one ounce of potassium nitrate, dissolved in the pail of drinking water, together with the employment of a nutritious and rather laxative diet, and the protection of the body from currents of air and maintenance of its thermal equilibrium by means of good woollen coverings, constitute the more ordinary treatment.

The administration of a brisk cathartic is prone to induce an apparent metastasis of the catarrhal affection from the air-passages to the intestines, and a fatal enteritis may thus ensue in the horse. The treatment, then, seems to be pretty well in accord with that in vogue in medical practice, for, notwithstanding the use of the modern antipyretics and analgesics in the recent epidemic, there seems to be a strong consensus of opinion as to the value of quinine. The complications are, of course, treated according to their kind, as they arise.

ACCORDING to the recent census the population of Liverpool, England, has decreased from 552,508 in 1881 to 517,951 in 1891.

A FEW HINTS ON THE TREATMENT OF COLLAPSE.

BY J. G. MUMFORD, M.D.

Shock, even to extreme collapse, may be the result of a great variety of causes, so that different lines of treatment are often obviously suggested. Shock may be due, among other things, to violent mental emotion; physical exhaustion; some form of poisoning; blows on the head, chest, abdomen or genitals (not giving rise to any obvious lesion); extensive lacerations; gun-shot wounds; surgical operations; hæmorrhage, from any cause; prolonged etherization; peritoneal perforation from organic diseases; and the infinite variety of complications following disease acute or chronic.

The effect of an overdose of cocaine is a species of shock which has become familiar; and the routine cardiac stimulants seem here to be of but slight advantage. As cocaine is itself a heart stimulant, the presumption is that they act on an organ in a state of reaction from overstimulation. A most valuable antidote in these cases is strong coffee; and this would seem to be a case of paradoxical *similia similibus curantur*, as caffeine closely resembles cocaine in its action on the heart.

In the large class of cases where collapse is due to excessive hæmorrhage, the failing cardiac action can be stimulated in many different ways; yet the benefit from the ordinary drugs used is often transitory, from the fact that, though the heart's action may improve, the great centres of the brain are still insufficiently nourished. The organism has been deprived of what has been called its most important "fluid tissue," the composition of which, for the immediate purpose of stimulating its own circulation has often enough been proved of no particular importance.

Patients under these circumstances naturally attempt to supply the deficiency by drinking large amounts of water; and so long as the stomach will bear this, it should not be withheld, popular tradition and the practice of many medical attendants to the contrary notwithstanding. A large draught of cool (not iced) water will often be well borne, and the patient will experience great relief; but the custom of giving ice to suck, though immediately grateful to the sufferer, is useless for supplying what the system demands; and the constant dribbling of cold water into the stomach is very apt to bring on an attack of vomiting, as well as adding to the shock already existing.

First and most important, therefore, the indication for an increased amount of fluid in the circulation in these cases is obvious and urgent.

The method of its introduction is often a difficult one. Transfusion of blood is now pretty generally looked upon as an obsolete procedure. Suitable apparatus and a willing victim are seldom at hand; and the fluid obtained is not superior in its effects to the saline aqueous solution commonly used — a one-half per cent. solution of common salt with a little bicarbonate of soda added. The procedure of infusion, however, in spite of its advantages over transfusion in speed of technique, cannot be considered a rapid operation, and often much valuable time may be lost and the patient sink beyond recovery before it can be completed. In these cases of hæmorrhage it has been my custom to give large hot enemata of a weak salt solution as soon as possible; and if necessary, this may be supplemented by infusion. The effect of these enemata is usually immediate and striking. The solution, in the exsanguined state of the patient, is absorbed with astonishing rapidity from the lower bowel; from the laws of endosmosis as well as from clinical observation, I should say much more rapidly than in a state of health. A quart may be given and repeated in half an hour without the slightest difficulty — the first injection being absorbed in that short space of time.

As a corollary, I may add that this observation led me to try giving nutrient enemata, largely diluted, in other cases requiring that method of feeding; using the ordinary ingredients, — peptonized beef-juice, milk and eggs, up to four or five ounces, — and adding half a pint or more of warm water. This mixture is so quickly absorbed that it can in many cases be repeated every four to six hours for days, and the thirst which is often so excessively troublesome in these cases, is thus very readily controlled.

In giving these injections the ordinary bulb syringe should never be employed. A large English web catheter attached to a short rubber tube with a funnel is the best apparatus. By this means the fluid can be introduced well up in the bowel, and can be given continuously, its force being readily controlled so as not to cause reflex expulsive movements.

In collapse the hot water enemata also serve an additional purpose, in that increased heat is brought to the abdominal viscera.

The ordinary methods of checking loss of the body's heat must never be omitted. The hot water mattress is an extremely useful apparatus, which is too seldom seen. In lieu of this, hot bottles, with light, warmed and thoroughly dry blankets should be employed liberally; the patient being kept flat on his back. The familiar procedure of raising the bed's foot so as to facilitate cerebral circulation is often useful.

Of all cardiac stimulants, alcohol probably stands first in this connection; but in giving alcohol to a patient seen soon after the accident which led to hæmorrhage, one should remember that he has probably been already overdosed, or that his injury may itself be the result of intoxication. A frequently made error of treatment is the overloading of the stomach with brandy, which is then returned, much to the patient's discomfort as well as subsequent depression. Champagne or brandy in soda are often well borne. It is a good plan, however, to add the brandy to the enema, or give it hypodermically in smaller amounts. In this way also, ether or the A. C. E. mixture may often be used to advantage.

It must not be forgotten that the injury to the patient may call for an operation, in which case the method of stimulation must be somewhat modified. It was taught, at one time, that an operation on a patient in collapse did not call for an anæsthetic, and that, therefore, stimulation should be pushed. The careful surgeon to-day, however, rarely operates upon a patient in profound collapse; preferring to wait for a rally, in which case, of course, an anæsthetic must be employed. In these cases ether is *par excellence* the drug to use, as when properly administered it is itself a stimulant. A very small amount is usually sufficient, without bringing the patient to a profound anæsthesia.

I have seen admirable results follow the exhibition

of liberal doses of digitalis — preferably by rectum or hypodermically as soon as the case is seen, before etherization; and this alone, or combined with opium in some form, will often steady and strengthen the pulse, quicken the mental faculties, and quiet the restlessness and pain, whether or not ether is given. In the former case opium is of great advantage in minimizing the amount of the anæsthetic required.

After operation under ether it is bad practice to use the same liquid again as a stimulant; and theoretically, too, alcohol is here contraindicated. As a matter of clinical experience, however, alcohol given hypodermically in small and repeated doses is seen sometimes to be of great advantage after etherization.

Of the various other drugs recommended in these cases, the value has seemed to me to be largely theoretical. Atropia is unsatisfactory when there has been large hæmorrhage, but I have found strychnia useful at times as a vaso-motor stimulant, especially in combination with digitalis. Nitro-glycerine, though throretically contraindicated, as being a vaso dilator, often strengthens a failing heart, and is a valuable adjunct. Greig Smith, among others, speaks highly of musk by enema in infusion. The great objection to it is its expense.

I do not propose in a short paper of this kind to go into the detail of treatment for different varieties of shock, but it is well for the practical man, especially in his surgical work, to bear in mind two great classes: those cases due to, or accompanied by hæmorrhage and those without it. Of the first class, as it occurs from accidents, I have spoken. Much the same line of treatment is applicable in case of hæmorrhage from operation, except that it is well here to give digitalis and morphia previous to etherization. In such cases, too, even when there has been an inconsiderable loss of blood a warm water enema is of value, given before recovery from ether, as it allays the excessive thirst and restlessness and often seems to check the nausea.

The collapse from post-partum hæmorrhage is treated on much the same principles, after the bleeding has been checked; supplemented by frequently repeated doses of ergot or hydrastis canadensis. Excessive hæmorrhage is not a common occurrence after a properly conducted case of labor; and it must be very seldom indeed that the practitioner is called upon to tampon the uterus. In case of persistent hæmorrhage the application of a little acetic acid, five per cent., on a pledget of cotton acts promptly and effectively often, when other ordinary expedients have failed. The acid has the advantage of being aseptic as well as a good hemostatic and stimulant to the relaxed uterine muscle. In these cases, too, the alternating injection of hot water into the rectum and uterus sometimes works very well. The intra-uterine douche both stimulates the uterine muscles, and by imparting increased heat to the abdominal viscera aids the general circulation; the hot enema supplements this and the fluid being left in the gut is quickly absorbed. The temperature of the water should not exceed 112° F.

In cases of shock not accompanied by hæmorrhage it is often necessary to inquire into the special cause of the condition. Many of the cases rally spontaneously without other assistance than rest and fresh air. Others require only mild counter-irritation. Very many, however, call for cardiac stimulants, though even their administration seems, at times, of little value. Among the most difficult cases to handle are those due to emotional causes, and the effect is proportionately enduring as the cause is impossible of removal. In many cases of shock without hæmorrhage the careful administration of atropia with nitroglycerine acts admirably. The cardiac action is strengthened and the peripheral vessels are, at the same time dilated, with the increase of the circulation in the cerebral centres.

It is in these cases, too, that counter-irritation acts to the greatest advantage — the hot bath supplemented by a mustard leaf on the epigastrium. Irritating local applications to the mucous membranes may accomplish the same end. A man fainting from the discomfort of an overdistended bladder may be revived by the passage of a catheter even when the urine is not reached; but under ordinary circumstances the irritation of this mucous membrane is not desirable.

Brandy, by the hypodermic syringe, is unfortunately the too frequent resource in all these cases. It usually accomplishes its end, to be sure, but the not infrequently resulting abscess is a serious drawback, and the operation is often a very shocking thing to the patient's friends and most disagreeable to the patient himself if he is in a condition to appreciate the procedure.

A very useful method of getting stimulants into the stomach is to pass a small, soft catheter through the nares into the pharynx. Through this, fluids can be easily introduced into the œsophagus. The manœuvre is so simple that its performance can be entrusted to any tyro. This method is most useful in some cases of collapse from acute poisoning, and in certain cases of hysteria as a substitute for rectal feeding or by the ordinary stomach tube.

In all cases of collapse the sustaining of what may prove but temporary reaction, by proper nourishment, must never be lost sight of. Few serious cases rally promptly and permanently, and the efforts of the surgeon, however painstaking, will often prove valueless, unless supplemented by intelligent, watchful and constant nursing.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D. AND H. W. CUSHING, M.D.

(Continued from Vol. CXXIV, No. 21, page 508.)

FRACTURES OF THE BASE OF THE SKULL.

IN an extremely valuable series of lectures delivered before the Royal College of Surgeons of England, W. H. Battle,[40] has contributed an analysis of a large series of fractures at the base of the skull. He has taken all the cases that have occured at St. Thomas's Hospital and at the Royal Free Hospital, and has tabulated and analyzed them, dividing them into non-fatal cases and fatal cases; into those involving the anterior fossa, middle fossa, posterior fossa, middle and anterior fossæ, middle and posterior fossæ, anterior, middle and posterior fossæ. The work, as presented by the author, is admirable, and may be of some avail in diagnosticating obscure cases. Regarding the diagnosis of basal fractures, Mr. Battle says:

"As a result of careful analysis of the cases con-

[40] British Medical Journal, July 5, 12, 19, 1890.

tained in these tables, I think we may say that, in fractures involving the *anterior* fossa of the base of the skull, the patient has usually received a blow in the frontal region, either from a weapon of some kind, or as the result of a fall; that the injury has produced bruising or wound of the part struck, and there is considerable epistaxis, and the appearance of ecchymosis under the conjunctiva, either immediately or at a later date. Sometimes the amount of blood effused into the orbit is sufficient to cause protrusion of the eye, and interference with the action of the muscles. Loss of vision may supervene in the eye of the injured side; loss of smell is rarely noticed. There may be paralysis of the third or sixth nerve. In fracture of the *middle* fossa the patient has usually fallen from a height, from a vehicle, or been knocked down in the street; and there is a wound or contusion over the parietal or fronto-parietal region. As a rule, he bleeds profusely from the ear on the side injured; there may be, however, a free, watery discharge from the first, or this may supervene on the cessation of the hæmorrhage. Facial paralysis, with or without deafness, is occasionally met with, and is an important sign of fracture; if it be present from the first, it will probably become permanent. The supervention of suppuration in these cases, or the presence of middle ear disease at the time of the accident, is a most serious complication. Fractures of the base having their origin in the *posterior* part of the skull are most frequently met with in big, heavy people, and they result most commonly from a fall backwards on hard pavement from a vehicle, from a height, or down steps. There may be a contusion or wound of the part struck. The latter is seldom extensive, rarely exposing the bone. The former is often very evident; it frequently overlies the commencement of the fracture. If the middle fossa be not involved, the only reliable sign of the fracture is the appearance of ecchymosis over the mastoid process; and, as this does not usually appear for some days, great care must be taken with patients who come under notice after injuries of the occipital region, as fractures in that part of the base are very fatal. The fractures are not uncommonly followed by double optic neuritis."

Regarding the cause of death from fractures at the base of the skull, Mr. Battle says:

"I have had a table constructed (not here reproduced) showing the cause of death in 54 cases of fracture of the base. The shock of the injury proved fatal in four; that the shock of the injury, combined with that resulting from other injuries, such as fractured ribs, was fatal in six. One patient died in convulsions within the hour after admission; four with arachnoid hæmorrhage at varying periods; 32 from cerebral contusion, with laceration and hæmorrhage; three from meningitis at the end of the second week; one, aged four, from uncontrollable vomiting; while the impaction of partly digested food in the pharynx produced asphyxia in another; delirium tremens proved fatal in one case; and only one, a patient with compound comminuted fracture of the skull, died from septic disease. Thirty of the cases died within a day after admission to the hospital. The most striking fact shown by this table is the large proportion of cases dying as a result of injury to the brain, more than half of the total number; and it is of interest to observe that of the eleven cases in which the fracture of the base was strictly limited to the posterior fossa (if we include one accidentally omitted from the table) all presented a similar condition of contused brain, with hæmorrhage as the cause of death. And I would ask you to give your attention to another fact, and that is the extreme fatality of these fractures in the posterior fossa, exactly one-half of the series of 22 proved fatal, a proportion far beyond that met with in other fractures of the base, which, as shown by these tables, is twenty-five per cent. for the anterior, and about the same for the middle fossa. In this series of cases, both fatal and non-fatal, the proportion of fractures in the posterior fossa, with regard to fractures in the other fossæ of the base, is larger than that usually observed.

"When we regard the large number of patients who die from cerebral injury with hæmorrhage from the part of the brain lacerated, the question presents itself most strongly for answer as to the advisability of using the trephine more often in an attempt to relieve them. The improved methods of operating, the slight increase of risk that is caused by the operation itself, and our enlarged knowledge as to the local condition in such cases, urge the performance of the operation, and at an early date. True, there are many factors against success, both in the condition of the brain and the general condition of the patient; but I would suggest that the cause of death is usually the presence of the blood-clot, and not the contusion of the brain. We are hardly in a position to state what extent of contusion and laceration of the frontal and temporo-sphenoidal lobes is incompatible with life. The operator must be guided by his knowledge of the effect of these injuries on the brain substance, and recollect that the fatal hæmorrhage will usually be over that part of the brain directly opposite to the part struck, and not immediately underneath it."

STERILIZATION OF CATGUT.

This important subject has been ably investigated by Larochette.[41]

"According to Reverdin, sterilization of catgut is more difficult to accomplish than is the case with any of the other materials used for suturing or ligature. He states that it is comparatively easy to destroy all the germs in catgut, if the latter is entirely free from fat, and is then submitted to a temperature of 140° C. for four hours. When the fat is not removed from the gut, the latter is fried in its own grease. For the purpose of determining the accuracy of this observation, Larochette introduced pieces of catgut into glass tubes, which were then hermetically sealed. These tubes were placed in an oil bath, the temperature of which was gradually elevated. At 90° C. the smallest catgut was so markedly altered as to be unfit for use. At 100° C. the largest size was similarly affected. For the purpose of entirely removing all fat, a quantity of catgut was then subjected to the action of ether and bisulphide of carbon. Precisely the same results followed as in the first series of experiments. Catgut deprived of its fat was then placed in a large oven, which was gradually heated. At a temperature of 100° C. it suffered no change. It was then kept for three hours at a temperature of 145° C. On removing it from the oven it was found to be slightly burned, but was still sufficiently strong to use in surgical practice. Those strands, however, which had been freed from fat by the action of ether were entirely useless,

[41] Lyon Medical, June 1, 1890; American Journal of Medical Sciences, October, 1890.

being rendered almost friable. Dynamometer tests applied to the catgut thus sterilized by heat showed that its resistance was but slightly lessened. This was particularly the case when the fat had not been removed. The strands were much less supple than before being sterilized by heat. Larochette considers that the sterilization of catgut by heat is perfectly practicable if the following points are carefully observed, namely, the gradual elevation of the temperature, and plenty of space for the evaporation of the water contained in the gut. After exposure for two hours to a temperature of 140° C. (284° F.) sterilization is complete. The catgut should then be placed by means of a pair of flamed forceps, in olive oil previously boiled, and containing ten per cent. by weight of crystallized carbolic acid.

A short article on this subject by George R. Fowler[42] details the result of his experimentation in obtaining complete sterilization of catgut. After numerous trials he has decided that catgut treated in the following manner will resist the bacteriological test for sterilization:

The catgut is wound upon ordinary, small wooden spools, such as are used for winding cotton or linen thread, these being previously boiled in a solution of soda for a time, in order to cleanse them and at the same time remove any coloring matter. The catgut wound upon the spools is then placed in a small fruit-jar, or ground-glass-stoppered bottle, the cover or stopper being left loose, and the requisite amount of alcohol being poured over it. A pint, he states, is sufficient for sterilizing fifty metres of catgut. The small fruit-jar, or ground-glass-stoppered bottle is then placed in a water-bath, or one of the steam milk-sterilizers in common use, or any method of boiling the alcohol may be employed. This is done for one hour. The alcohol he uses is ninety-five or ninety-seven per cent. This he considers a matter of a great deal of importance.

STERILIZED SALT SOLUTION IRRIGATION.

Fritsch[43] again calls attention to the value of a sterilized hot six-tenths per cent. salt solution for irrigation or cleansing purposes in operation where previous infection of tissues is absent. This solution (temperature 38.5°) in abdominal operations, he claims strengthens the pulse in collapse.

ZINC PASTE DRESSING FOR HARE-LIP.

Von Noorden, Tubingen,[44] has recommended the paste first introduced by Socin in 1883, as a dressing superior to others in simplicity, convenience, mechanical and antiseptic effect.[45] It has the quality of drying very quickly in a firm crust when exposed to the air. After completing the operation the suture line is disinfected and carefully dried. The paste then freshly prepared is applied over the whole upper lip with a brush or spatula with one or two very thin layers of cotton interspersed for support. If the wound extends into the nostril the paste should cover it throughout its extent but without blocking the nostril. It dries rapidly and forms an air-tight firmly adherent covering over which the nasal secretions run without dissolving it. It is non-irritating. The dressing is changed on the fourth to sixth day for removal of sutures. If not already loose it can be slowly cut away peicemeal with scissors. A fresh dressing is then applied which is allowed to remain till separated spontaneously. This dressing was satisfactorily tested by v. Noorden in ten cases. It was also used for small sutured wounds of the face, herniotomies, cancer of the lip, etc.

[42] New York Medical Record, August 16, 1890.
[43] Deutsch Med. Wochenschrift, 1890, xvi, 19.
[44] Beitrag z. Klin. Chir., 1889, Bd. iv, Hf. 2.
[45] ℞ Zinci oxidi, 50 parts; Zinci chloridi, 5-6 parts; Water, 50 parts. M.

METHOD OF CONTROLLING THE SUBCLAVIAN ARTERY.

W. W. Keen,[46] suggests the following method of controlling the subclavian artery during an operation:

A strong Esmarch bandage is selected, which is used to exert pressure on a suitable roller bandage two inches wide, that is placed above the clavicle over the position of the artery as ascertained by the touch. The elastic bandage is then passed over the roller bandage down the back between the thighs and up the front of the trunk. Every alternate turn is passed round through the opposite axilla, in order to prevent the roller bandage, which compresses the vessels, from slipping. By this means, when properly applied, one has, Dr. Keen states, an effective method of controlling the subclavian artery.

[46] Annals of Surgery, July, 1890.

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Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.
THE ONE HUNDRED AND TENTH ANNUAL MEETING.

BOSTON, JUNE 9 AND 10, 1891.

(Continued from Vol. CXXIV, No. 26, page 637.)

SECTION IN MEDICINE.

DR. A. H. JOHNSON, of Salem, Chairman. DR. HENRY JACKSON, of Boston, Secretary.

DR. W. H. PIERCE, of Bernardston, read a very interesting paper on

TYPHOID FEVER.

The poison of typhoid fever does not originate in cesspools, but finds there the most favorable soil for its development. The germ must undergo further change after it leaves the intestine before it can produce the disease in another patient. Dr. Pierce referred to the many cases of typhoid fever where it was impossible to make a diagnosis in the early stages. The diet of a typhoid fever patient is very important, the digestive functions being impaired; the food should be simple. Milk and the various preparations of milk are by far the best. No solid food should be given till convalescence is assured. Alcoholic stimulants are useful, but should be given only when required; they are particularly called for in the latter stages of the disease, when there is danger from heart-failure. Dr. Pierce considers the too general use of antipyretics uncalled for and tending to reduce the temperature at the expense of the heart. Cold, in the form of cold baths and sponging, he heartily recommended, and said he had experienced great success in this line. The stools of typhoid patients should always be thoroughly disinfected.

DR. E. N. WHITTIER, of Boston, expressed great interest in Dr. Pierce's paper, and he emphasized the importance of exercising extreme care in the employment of drugs, especially those intended to reduce the temperature. The cold bath for the reduction of the temperature in a case of typhoid fever is a most excellent way. The profession seem to be gradually acquiring the knowledge of the fact that it is not the abstraction of heat that does the work, but that it produces its chief and beneficient effect by the influence on the nervous system. The statistics brought forward by those who are in favor of the cold-bath treatment are incontestable; the mortality of typhoid has been greatly reduced by its employment. Antiseptics are demanded in every case of typhoid, and a great deal depends upon their careful employment. Carbolic acid and corrosive sublimate, for the disinfection of the stools, are too dangerous to leave in the hands of the inexperienced; and in these cases chloride of lime should be substituted. We must render the contents of the small intestine as aseptic as possible, and to this end salicylin or salol can be used. This is especially useful in those comparatively rare cases of typhoid which run their course in constipation. The flushing of the colon is a good thing. It has not been Dr. Whittier's practice, for the first four weeks of a case, to give any other kinds of food that those found in milk and preparations of milk, — milk whey, peptonized milk, the albuminoids, so-called, are neither needful nor safe, and we may regret using them. Nathan Smith well remarked, with reference to the treatment of infectious diseases, to give fresh air, fresh water, and few drugs; and experience has demonstrated this to be good advice.

DR. C. C. ODLIN, of Melrose, thought that typhoid fever has gradually become milder within the past twenty years. Its type has become considerably changed. He referred to the difficulty of differentiating in some cases between typhoid and other diseases, particularly cerebro-spinal meningitis. Our forefathers thought they knew how to treat typhoid when they bled and purged and salivated their patients. We believe typhoid fever is a self-limited disease, and that we can save our patient if we only can keep him alive long enough. It seemed to him that within the past few years many physicians had felt that temperature and typhoid fever were synonomous terms, and the main aim at treatment had been to pull down the temperature at all hazards. As a result, we had the treatment by cold baths, which had been alluded to; but with which the speaker had no experience. Then there were the many coal-tar preparations, antipyretic in their character, and the use of which, in his opinion, was not devoid of danger. Of course, when the temperature went very high, so as to make us fear heart paralysis, it might be necessary to occasionally give antipyretics; and he thought, on the whole, that phenacetin was the safest. The use of antiseptics in typhoid fever was called for.

DR. J. A. GAGE, of Lowell, said he had a few remarks to make regarding the prophylactic treatment of typhoid. He referred to the recent epidemic of typhoid in Lowell, and mainly attributed it to the lack of necessary antiseptic precautions on the part of the inhabitants of Lowell.[1] Many of the houses have privies which do not connect with sewers, and into which the dejecta of typhoid patients are thrown, and

[1] See Professor Sedgwick's analysis of water-supply of Lowell, with reference to this epidemic, Journal, p. 397.

in many instances there is no pretence of making the stools aseptic. As a member of the Lowell Board of Health he worked hard to abolish these privies, but with poor success. Dr. Gage insisted upon the necessity of a thorough disinfection of the stools, and he gives to every family in whose midst is a case of typhoid fever which he is called to treat, antiseptics, and sees that the stools, linen, etc., are disinfected.

DR. J. A. JEFFRIES, of Boston, read a very instructive paper on

THE BACILLUS OF TYPHOID: ITS OCCURRENCE AND SIGNIFICANCE.

THE PRODROMAL AND EARLY SYMPTOMS OF BRIGHT'S DISEASE

was the title of a carefully prepared and able paper by DR. C. F. WITHINGTON, of Roxbury.

Dr. Withington collected and tabulated the early symptoms of a number of cases from the Boston City Hospital records. Overworked business men and such, as a rule, do not look for symptoms; they have other things to occupy their attention; and this class of men do not often consult the physician in the early stage of their disease. Dr. Withington spoke of gout and rheumatism as probable causes for Bright's disease. The early symptoms vary a good deal in different individuals. Continuous or paroxysmal dyspnœa is one of the earliest and commonest symptoms of Bright's disease. Œdema, palpitation of the heart, cough, delirium, and lumbar pain were present as early symptoms in some cases. Sometimes there is constipation, and the head feels muggy, or the patient may be irritable or morose. Insanity of Bright's disease is recognized.

DR. GEO. B. SHATTUCK, of Boston, said: Dr. Withington has shown us very satisfactorily the results of carefully collected statistics from the records of our largest hospital. It is, however, from the private practitioner that we should expect to get the most instruction with regard to the *prodromal* symptoms, at least, of Bright's disease. There are very few private practitioners who are in a position to give us much personal instruction in regard to this question, and those few are apt to be such busy men that they do not keep their records of this class of cases always in a way to be available. Then, again, in our time very few physicians take care of a family through a whole generation, and those physicians who take care of a family through more than one generation scarcely exist any more. Rheumatic arthritis and gout no doubt predispose to the disease, and a person who has inherited this rheumatic or gouty diathesis may, in turn, be said to be from birth, almost, subject to the prodromal symptoms of Bright's disease, and in following such an one from his early years down through his adolescence into middle life we get at the real and best lessons upon this subject. Then there are the individuals who have been exposed to poisons, such as lead and arsenic; and those patients may be suspected of exhibiting at any time the prodromal symptoms of Bright's disease.

Of course, there is a great deal in the question of increased arterial tension; it is a warning of a functional stage we ought to recognize clinically from the pulse by the finger, at least, as shown by length, persistence and incompressibility — and after having recognized it clinically, we ought to make use of it for the benefit of our patient, by careful regulation of diet, dress and mode of life. The spygmograph has not justified the confidence as an instrument of precision which some clinicians were disposed, twelve or fifteen years ago, to repose in it.

DR. E. G. CUTLER, of Boston, said: Dr. Withington has placed rheumatism among the prodromal symptoms of Bright's disease. So far as I recollect now, it has never been my experience to see many cases where that preceded Bright's disease, outside of hospital patients. In regard to gout, we all believe it to be a frequent cause of Bright's disease. Cases of lead poisoning I have happened to see once or twice as prodromal symptoms in the production of the disease. I have also seen some cases of arsenical poisoning which were followed by chronic interstitial nephritis. In one of the cases the arsenic was administered by the cook in the family; and the case was followed up for some time. In regard to œdema, one who has examined a large number of cases for life insurance, I think, must be careful in accepting that without other symptoms as an early symptom of kidney disease. I have seen œdema of the legs frequently, particularly in persons beyond middle life, where kidney trouble was not present. Œdema of the face I am inclined to lay more stress on. In regard to the question of heredity raised by Dr. Shattuck, the life insurance companies place much importance upon the presence of certain diseases in other members of a family.

(To be continued.)

COLORADO STATE MEDICAL SOCIETY.

MEETING JUNE 17, 1891.

TUBERCULIN: THE VALUE AND LIMITATIONS OF ITS USE IN CONSUMPTION.

THE following are the conclusions given by Dr. Charles Denison, in summing up his investigations of the above subject embodied in his paper read before the Colorado State Medical Society, June 17, 1891:

The cases under treatment numbered nineteen, and they are fairly classified about as follows: Five finished cases much improved or cured; five yet under treatment, favorably progressing; four favorable cases left off treatment for reasons given; five not benefited, or unfavorable cases for this method of treatment.

The following conclusions, however poorly elaborated in the body of this report, seem to me to be warranted at this stage of our investigations:

(1) Tuberculin furnishes a natural method of cure to be classed with stimulants, hypho-phosphites, chloride of gold hypodermically used, exercise, high altitudes and cold, dry air: yet it is too powerful to be indiscriminately used, and the proportion of consumptives for whom its use would be advantageous, remains to be determined.

(2) It is unreasonable to expect that tuberculin will be useful in sepsis, or any poisonous blood state other than tuberculosis.

(3) Use tuberculin not as a substitute, but as an aid to climate, and other natural methods of cure; proper food, hygienic surroundings; mountain climbing, etc., especially are high altitudes and exercise indicated, if otherwise advisable, because they favor the ventilation of lung necessary in giving tuberculin.

(4) Seek only local reactions in the affected tissues.

A high or prolonged febrile reaction is to be avoided, if possible. Use the minimum dose that will accomplish this purpose, and it is preferable to let at least a day elapse between a subsidence of one reaction and the possible creation of another. Remember that an increase from one-quarter to one-third of a milligramme may be as great for a case already reacting to the smaller dose, as an increase from thirty to forty milligrammes in a case that far advanced in the treatment.

(5) The lack of ventilation in a lung, whether caused by tuberculin already used or whether pre-existing, is a decided contra-indication to pushing the treatment, that is, according to this deficiency and the febrile state.

(6) The test for the proper ventilation of a tubercular or fibro-tubercular lung, is to be found in the comparison of the spirometrical record with the bilateral measurements of the chest and with available physical signs. A fair way to express this deficiency is to say, if the normal spirometical record for the height is abridged one-half and the movements of the two sides are as one to two, then there is sufficient lack of ventilation in the weakest lung for extra caution as to using tuberculin at all. There is either too much elastic tissue already there, or the bacilli, if loosened by tuberculin, may not be expelled.

(7) The stage of the lung-disease has not so much to do with the question of using tuberculin at all, as has its extent and locality, the febrile course and the ventilation of the affected lung. If possible have an average daily range of temperature of less than two degrees upon which to proceed, and the patient able to be much of the time in the open air.

(8) The diagnostic value of small hypodermics of tuberculin is shown, with or without febrile reaction, in the appearance on auscultation, at suspected or affected spots in the lung substance, of a more or less decided ***roughening of a previously existing broncho-vesicular respiration***, or a ***high-pitched rude breathing*** where before only a feeble respiration was noticed.

(9) With the appearance of any unfavorable physical signs during the course of tuberculin treatment, such as a clogged-up section of lung, or moist râles so located as to be suspicious of softening, I think it would be well to intermit injections of tuberculin and substitute those of iodine for a while, or to give temporarily syrup hydro-iodic acid compound, or to use inunctions of oliate of mercury over the affected lung, until a return to the use of tuberculin is quite safe.

(10) As to permanence of effects produced by tuberculin injections, there is to me no apparent reason for expecting any more lasting results than from any other agency which will accomplish as much. I do not see any reason why bacilli should not appear again in the sputum after their cessation under tuberculin treatment, as after their cessation under climatic treatment, or the double chloride of gold injection.

It is quite probable that the effect of tuberculin is temporary. We need not look for a guaranteed immunity from lung tuberculosis, except under such other conditions of healthful living as would insure it.

In fine, tuberculin is not a remedy to be chosen for the great majority of pulmonary consumptives in preference to a proper change of climate, for it does not equal the latter; but with such a change it is an important adjuvant to the cure of a large selected class of tubercular lung diseases.

THE BOSTON

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CEREBRAL HÆMORRHAGE.

IT was known to Morgagni and other of the older pathologists that cerebral hæmorrhage oftener takes place into the corpus striatum and optic thalamus than into any other part of the encephalon. Charcot's statistics show that in 301 out of 386 cases, the hæmorrhage was seated in the above mentioned region. Evidently, then, the arteries in this situation must be weaker and less able to stand exaggerated tension than in the pons, cortex, and other parts. The normal arterial wall does not readily rupture, as the experiments of Worm-Müller show. Cruveilhier and Virchow many years ago described an ampullary dilatation consecutive to atrophy of the muscular tunic as characteristic of cerebral arteries that undergo rupture in apoplectic extravasations, and still later, Charcot and Bouchard described similar lesions, under the name of miliary aneurisms, following diffuse periarteritis. These aneurismal dilatations exist in all cases of cerebral hæmorrhage, and are oftener than elsewhere seated in the arteries of the opto-striate bodies.

In response to the question, *Why* this predisposition of these arteries to miliary aneurisms, Mendel at the recent meeting of the Medical Society at Berlin (May 27, 1891), referred to the anatomical relations of these arteries. They are terminal arteries, having no anastomoses with the neighboring arteries. This, at least, applies to the basal ganglia; as for the arteries of the cortex, they present numerous anastomoses (Heubner and Mendel).

As the result of numerous personal researches, Mendel finds that the blood-pressure as measured by the manometer, is the same in the carotid and in the artery of the corpus striatum, while it is lower in the arteries of the cortex; thus, if the tension measures thirty millimetres in the carotid, it is sixteen, seventeen, or twenty-three in the arteries of the cortex. Hence, if the heart's impulse raises the tension in the arteries, this is much greater in the arteries of the corpus striatum than in those of the cortex; conse-

quently, if the arterial walls present any pathological alterations, the vessels of the corpus striatum give way much the more readily before a sudden rise of blood-pressure.

Why such ruptures rarely occur in the pons where also the arteries are terminal and come from the vertebral is explained by anatomical reasons. The vertebral artery and the basilar artery have a flexuous course, and the augmentation of the blood-pressure has for effect to cause these flexuosities to disappear, which prevents the sudden variations of tension in these arteries.

Some experiments of E. H. Weber give some light on the question why the arteries of the opto-striate bodies are the seat of miliary aneurisms. This experimenter has shown that in elastic tubes the sudden augmentation of pressure of the liquid which traverses these tubes has for effect not only to dilate, but also to elongate them. It may then be admitted that the augmentation of pressure in the arterial system has for its result to cause elongation of the artery of the corpus striatum, and to produce little lateral dilatations. Little by little, if these variations of pressure are repeated, the muscular tunic atrophies, the dilatations remain permanent, and the slightest exaggeration of pressure ends in causing their rupture. A certain number of hæmorrhages result not from active pressure, but from venous stasis. The artery of the corpus striatum with difficulty forces its blood-column through the very narrow veins which empty into the vena galeni, while the veins of the cortex which empty into the sinuses are relatively very large.

How, asks Mendel, shall we explain the principal phenomena observed after an apoplectic ictus? We have in a certain focus an extravasation of blood, and the surrounding territory becomes the seat of a correlative anæmia; this, in most cases of cerebral hæmorrhage, is the cortical region. This anæmia explains the loss of consciousness, the vomitings, and the convulsions.

In their application to therapeutics, Mendel thinks these considerations fruitful in hints as to the rationality of ancient and modern modes of treatment.

Bleeding can only be of use as a preventive of vascular rupture when tension is exaggerated, but how seldom is one forewarned of the favorable moment! In our day, for bleeding is substituted the ice-cap. Is this a rational mode of treatment? On the one hand, it is impossible that the action of the cold can penetrate the interior of the cranium to the source of the hæmorrhage; on the other hand, if it exerts its influence on the cortex, it determines a contraction of the vessels which can only force the blood into the central parts and raise still more the blood-pressure there. The only rational treatment, Mendel thinks, is absolute rest of the body with the head elevated.

In the discussion which followed, Senator remarked that Mendel had omitted an important factor in the pathogeny of apoplexy, namely, arterio-sclerosis. As regards treatment, clinical experience has proved the benefits of external cold. He (Senator) believes that the ice-cap reflexly excites contraction of the deep as well as superficial vessels; certainly its sedative action cannot be denied.

Virchow said that when the arteries receive an exaggerated blood-impulse, two orders of processes may develop in their walls: (1) a simple proliferation of the constituent elements, so that the walls thicken at the same time that the vessel is dilated; (2) an inflammation of the internal tunic followed by sclerosis.

These two processes may be combined, but their application to the pathogeny of cerebral apoplexy is not as simple as one might think. In cases of collateral anastomoses we find serpentine dilatations about the inflections which receive the brunt of the blood-shock; now in cerebral apoplexy, this serpentine form is rare, and we often find only one little saccular aneurism. This occurrence is with difficulty explained by the general conditions of the blood-pressure. Moreover, we sometimes find, on the surface of the cerebrum, in the pia-mater, an apoplectic focus, and, on close examination, we discover only one little miliary aneurism. To this, we must add that the cerebral hæmorrhage is generally unilateral, while the blood-pressure is as great on one side as on the other.

Mendel in reply to Senator, said that he had intentionally neglected to speak of arterio-sclerosis, which has nothing to do directly with apoplexy. Virchow showed this in 1856, and it is also the view of Charcot.

ALBUMINURIA IN PERSONS APPARENTLY HEALTHY.

AT the last meeting of the American Medical Association, "The Prevalence of Albuminuria among Healthy Persons" was one of the subjects discussed. Dr. William B. Davis, of Cincinnati, who took part in that discussion, has since read a paper upon this same question in its relation to life assurance, to which his position as medical director of an important life insurance company, and the fact that he addressed a meeting of the Association of Medical Directors of such companies, lend additional importance and interest.[1]

Dr. Davis considers at length the causes of functional albuminuria — its diagnosis, its prognosis, and finally the relation of albuminuria to life assurance. He points out that scarcely fifteen years have elapsed since the attention of the profession has been called to the circumstance that albumen may be found in the urine of persons who do not exhibit any of the general symptoms of Bright's disease, nor even any deterioration of health; and that the evidence of those fifteen years goes far to prove that these cases of albuminuria do not all end in organic disease of the kidneys. From a careful study of the information which these years have given us, and of the testimony of the most trustworthy authorities on the subject, he concludes

[1] Advance sheets of the New York Medical Examiner.

that the following general rules may be followed in the consideration of candidates for life assurance having albuminuria, namely:

(1) There should be nothing in the family history indicative of heredity of Bright's disease, and there should be no symptom of renal disease in the personal history except albuminuria.
(2) The candidate should be under forty years of age, in good health, and there should be no history of gout, rheumatism, syphilis, lead poisoning, nephritis, intemperance, chronic dyspepsia, or dropsy.
(3) There should be no indication of hypertrophy of heart or increased arterial tension, no accentuation of the aortic second sound, and no palpitation or dyspnœa.
(4) There should be no retinal changes.
(5) The color, density and quantity of the twenty-four hours' urine should be normal, or it may be darker in color and heavier in density.
(6) The specific gravity of the twenty-four hours' urine should not be below 1.020. It may range from 1.015 to 1.030.
(7) The precipitated albumen should not exceed one-eighth of the urine.
(8) There should be a period of the twenty-four hours when the urine is free from albumen.
(9) The urine, as a rule, should contain no tube-casts. When, however, the specific gravity and quantity of urine are normal, the presence of a few hyaline casts have no serious import.

When the above conditions have been met, he thinks it safe to approve the candidate for a short endowment policy, but adds: "To a person who has passed the above gauntlet and been subjected to a rigid medical examination, this action will doubtless appear illiberal; but until the clinical significance of albuminuria in persons apparently healthy has been finally determined by observations upon one full generation, we cannot, and probably ought not, to expect life assurance companies to do any better for them."

The general sense of the discussion which followed, in which a number of examiners participated, seemed to coincide with the conclusions of the paper, and to be expressed in the statement of Dr. Frank Wells that while it cannot be affirmed that all albuminuriacs are uninsurable, it is only prudent to continue to consider them, as a class, impaired lives, until science has more clearly proved that albuminuria may be physiological, and hence, under certain conditions, not a bar to insurance.

"Functional" and "cyclical" albuminuria are still to be looked at askance, and as conditions which have still to prove their claims to associate with "good lives."

AN INTER-CONTINENTAL AMERICAN MEDICAL CONGRESS.

At the recent meeting of the American Medical Association at Washington the proposition to hold a Pan-American Medical Congress took a definite form, in the introduction of resolutions by Dr. Charles A. L. Reed, of Cincinnati. The resolutions, which were carried unanimously, were as follows:

Resolved, That the American Medical Association hereby extends a cordial invitation to the Medical Profession of the Western Hemisphere, to assemble in the United States in an Inter-Continental American Medical Congress.

Resolved, That the Committee on Nominations be and is hereby instructed to nominate one member for each State and Territory, and one each from the Army, Navy and Marine Hospital Service, who shall constitute a committee, which is hereby instructed to effect a permanent organization of the proposed Inter-Continental American Medical Congress, and to determine the time and place at which the same shall be held.

A committee was accordingly appointed, which met before the Association adjourned, and elected officers, who were also constituted a special committee to draft a constitution and report the same at an adjourned meeting of the general committee, to be held in St. Louis on October 14th, when the time and place of meeting of the Congress will be decided, and permanent officers elected.

It has been generally understood that the Congress is to be held in Chicago in connection with the Columbian Exhibition, and as the establishment of a series of congresses to be limited to the profession of the Western Hemisphere, and still to be of sufficient interest to attract a fair representation of medical men from other American States, may be fairly said to be a more or less doubtful experiment, it seems essential that the first meeting should have the attraction of the Exhibition as a coadjutor. It is, therefore, unfortunate that the year of the Chicago World's Fair should be the same as that of the International Medical Congress in Rome.

If the time of the proposed Congress conflicts with the time of the International Congress in Rome, it is surely too much to expect foreign, or even many American medical men from a distance to prefer the Congress in Chicago to that in Rome. If, on the other hand, the time could be so arranged that physicians from Central and South America could attend the Pan-American Congress just before or just after that at Rome, this fact, in connection with the presence of the World's Fair, may lead to a considerable attendance.

Apart from the World's Fair, it seems doubtful whether Chicago is a sufficiently pre-eminent medical centre to justify its selection as a place of meeting.

The medical profession of the United States have always been in closer relationship to that of Europe than to that of the Spanish-speaking countries of this continent. It is, of course, to bring the latter into more intimate relations with us that the Congress has been organized, but it might seem as if anything like a close relationship were practically impossible. Although living in the same hemisphere, we are, in point of time, in customs, and in languages much nearer certain countries of Europe than we are to South America, while, on the other hand, the same may be said of the Spanish-speaking countries of America.

The United States is such a large part of North America, that, unless a large contingent from South America is likely to attend, the objects of an American Congress might be reached by admitting Canada, Mexico and Cuba to our already organized National Associations. In fact, Canada is already represented in some of them, and her representatives are by no means among the least active and valuable of the members of that Association.

MEDICAL NOTES.

THE POPULATION OF IRELAND AND OF LONDON. — On April 5th last the population of Ireland numbered 4,706,162 inhabitants, of whom 2,317,076 were males and 2,389,086 females. This shows a decrease as contrasted with the previous census of 468,674, or 9.1 per cent. In 1841 the population was over eight millions, and in 1861 a little over five and a half millions. The number of families this year represents an average of five persons per family, in 1881 the average was five and two-tenths. The revised estimate of the population of London proper in the middle of this year is 4,221,452, and for the outer ring 1,435,457, making, the population of Greater London as now estimated 5,656,909.

MEDICAL EDUCATION IN CANADA. — The Medical Council of the College of Physicians and Surgeons of Ontario recently passed the following resolution: "On and after the 1st of July, 1892, every student must spend a period of five years in actual professional studies, except as hereinafter provided, and the prescribed period of studies shall include four winter sessions of six months each and one summer session of ten weeks; the fifth year shall be devoted to clinical work, six months of which may be spent with a registered practitioner in Ontario and six months at one or more public hospitals, dispensaries, or laboratories, Canadian, British, or foreign, attended after being registered as a medical student in the register of the College of Physicians and Surgeons of Ontario; but any change in the curriculum of studies fixed by the council shall not come into effect until one year after such change is made."

LEGIBLE PRESCRIPTIONS. — There are advantages in living under a paternal government, says the *British Medical Journal*, which even Mr. Herbert Spencer may be disposed to admit. The Austrian Minister of the Interior has recently issued an ordinance that the burgomasters of all communes must exercise strict supervision over the medical men practising within their jurisdiction in the matter of legibility of prescriptions. They are charged to see that every prescription is clearly and legibly written in all its parts, so that there may be no doubt as to the remedy, the dose, or the signature. If the average handwriting of Austrian medical practitioners is as cryptic in its character as that of many of their brethren in this country, it is to be feared that many worthy men in the upper, not less than in the lower, professional circles, will have to go to school again till they have at least learnt to sign their own names so that they can be read without the aid of divination.

ILLEGAL PRACTICE OF MEDICINE ON A DEAD BODY. — A nice point of law has lately been debated before a French Court. The question was whether an operation on a dead body by an unqualified person came within the meaning of the enactment forbidding the illegal practice of medicine. It appears that a pregnant woman had just died, the cause of death not being stated. The curé of the village, who had been with her in her last moments, induced a neighbor who was in the room to perform Cæsarean section on the corpse with the view of saving the child. The operation was successful; but the operator was brought before the magistrate, and fined fifteen francs for having been guilty of illegal practice of medicine.

NEW ENGLAND.

THE SEA-SHORE HOME, mainly for intestinal diseases of infants, which since 1878 has been situated in Winthrop, Mass., and opened during the summer months, cannot be opened this year on account of the opposition of the residents of Winthrop.

HARVARD MEDICAL SCHOOL, CLASS OF 1891. — At the Harvard University Commencement, June 25, sixty-three candidates received the degree of M.D. Of these forty-six had taken the regular three years' course, and seventeen the four years' course. Of the latter, eleven received also the degree of A.M. According to the catalogue for the year 1890-91, the number of students in the Third Class was seventy-two, and in the Fourth Class twenty-six.

THE HARVARD MEDICAL SCHOOL AND THE UNIVERSITY CREW. — It is noticeable that the Harvard Medical School furnished one of the best of the oarsmen in the winning crew at the recent race at New London, and this fact is regarded by some at once as an indication of the liberality of medical studies, and of the importance of having a medical school attached to a university. It is said that arrangements were made to allow him to take his examinations on the banks of the Thames, but this report is not true.

MEDICAL DEPARTMENT OF YALE UNIVERSITY. — The graduating exercises were held in Battell Chapel, on June 23. The annual address in medicine, delivered by Dr. John S. Billings, U. S. A., is published in the last and the present issue of the JOURNAL. Fifteen members of the graduating class received the degree of M.D.

MAINE MEDICAL SCHOOL. — At the graduating exercises at Brunswick, June 24, twenty-eight candidates received the degree of M.D.

NEW YORK.

ACCIDENT AT THE COLUMBIA SCHOOL OF MINES. — A sad accident occurred at the School of Mines of Columbia College on June 25th, by which Prof. John L. Northrop, Instructor in Zoology and Paleontology, received fatal injuries, and two janitors were seriously burned. Professor Northrop had occasion to go to the cellar to get some alcohol for the preservation of specimens, and the head janitor and engineer of the buildings with an assistant janitor accompanied him, each bearing a demijohn. The barrel of alcohol having been turned on its side, he lighted a gas jet jutting out from the wall, and proceeded to draw out the bung; when a terrific explosion followed. It is supposed that the fumes of the alcohol escaped and were ignited by the gas, the bar-

rel containing the alcohol having been placed near some steam pipes, and having been subjected to more or less heat for a considerable time.

A Case of Tetanus. — A patient aged forty-four years died at the German Hospital on June 22d, from tetanus, which is believed to have been caused by the extraction of three upper teeth.

Miscellany.

A LAW FOR THE DETENTION OF CERTAIN PERSONS WITH SYPHILIS.

The Massachusetts Legislature passed the following act just before it adjourned, so that it is now the law of the State:

Section 1. Any person who is confined in, or an inmate of, any State penal or charitable institution, a common jail, house of correction or municipal or town almshouse, who shall have the disease known as syphilis, shall at once be placed under proper medical treatment for the cure of such disease, and when in the opinion of the attending physician it is necessary for the proper treatment thereof, or that such disease is contagious, so as to be dangerous to the health and safety of other prisoners or inmates in such institution, the persons under treatment shall be isolated from such other prisoners or inmates until the contagious stage of such disease has passed, or until the time when in the opinion of the attending physician such isolation is unnecessary.

Sect. 2. When at the expiration of the sentence of any person who is confined in, or is an inmate of, any of the institutions named in section one of this act, such person shall then have the disease known as syphilis in its contagious or infectious symptoms, or in the opinion of the attending physician of such institution, or of such physician as the authorities thereof may consult, would cause the discharge of such person to be dangerous to public health and safety, such person shall be placed under proper medical treatment, and kept and suitably cared for as provided in section one of this act, in the institution where he has been confined, until such time as in the opinion of the attending physician such contagious and infectious symptoms shall have disappeared, and the discharge of the patient shall not endanger the public health. The expense of his support not exceeding three dollars and fifty cents a week shall be paid by the city or town where he has a legal settlement, after notice to the overseers of the poor of such city or town, or, if he is a State pauper, after notice to the State Board of Lunacy and Charity, of the expiration of his sentence, and of his condition. [*Approved June* 11, 1891.]

AN OBSTACLE TO SCIENTIFIC RESEARCH IN ENGLAND.

In a dispatch, dated June 6th, the London correspondent of the New York *Times* says: "The principal biologists and scientists of England, headed by Lubbock, Lister, Lockyer, Playfair, Roscoe and others, to the number of one hundred and fifty, and backed by strong letters from Huxley and Tyndall, yesterday waited on Sir Michael Hicks-Beach, President of the Board of Works, for a second time, to beg that a license be found for the British Institute of Preventive Medicine, and for a second time met with a refusal. Their eloquent speeches laid stress upon the national disgrace of a situation in which English students of bacterial growths were compelled to go to Paris, Berlin, and Vienna to study their science, and intelligent inquiry and experimental research were forbidden on English soil, as if it were an impious thing to seek for wisdom in the science of saving human life. Sir Michael Hicks-Beach gave an evasive and roundabout reply, which the London *Times* editorially translates as meaning that the anti-vivisectionists have many times more votes in England than all its men of science put together. English laws pay great attention to conserving the rights of rich men to breed hares, rabbits and game birds for annual slaughter and maiming by shooting parties, but they sternly punish a man of science who chloroforms one of these rabbits for purposes of experiments having no earthly purpose but to increase knowledge as to saving human life. But without these grotesque paradoxes this wouldn't be England."

IS MALIGNANT PUSTULE AN ACCIDENT?

Similar questions have been discussed in different courts, suit being brought to compel accident-insurance companies to recognize different forms of septic infection as an accident. In a recent trial in Albany a case was tried in which a man who had a policy in such a company in some unknown way became afflicted with a malignant pustule, which formed on his lip and from the effect of which he died.[1]

The reasoning of the plaintiff's attorney was, that the pustule was the result of an external injury, accidentally received; that the pustule, which fastened on his lip, came suddenly from the outside; it was not a disease, and death was therefore effected through accident.

The facts proved were these: That car-loads of hides frequently passed the railroad station where the insured was employed, and that a large number of cattle are brought there and slaughtered in the vicinity.

There was no direct proof that the deceased ever came in immediate contact with the hides or flesh of those animals or swallowed anything affected. Several physicians testified, among them F. A. Harris, M.D., of Boston, to the effect that a case of malignant pustule is not a disease, in the strict sense of the term, but a pathological condition of the system, caused by the accidental infliction of diseased or putrid animal matter, infested with bacteria or anthrax bacilli upon the thick skin of the lip, whence the bacilli multiply and are diffused through the system. In speaking of it he said that there had been noted epidemics of the disease.

The defence claimed that an epidemic disease was inconsistent with an accident theory. Also, that a pathological condition is not an accident in a legal sense. As it was also claimed that it was a carbuncle, the judge charged the jury that if it was a carbuncle, the plaintiff could not recover; but that if it was a malignant pustule, he could. The verdict of the jury was conclusive that it was a pustule. A verdict was given for the plaintiff.

In the Court of Appeals the principal case relied on as a precedent by the plaintiff was a recent one in which a guest at a hotel died from the involuntary inhalation of illuminating gas while asleep. This had been decided to be an accident within the meaning of an accident-insurance policy.

[1] Brooklyn Medical Journal, June, 1891.

The Court of Appeals divided in this case on the question involved, Judge Peckham leading the majority, including also Judges Andrews, Earl, Finch and Gray; while Judge O'Brien wrote a dissenting opinion, which was concurred in by Chief Judge Ruger. The judges on both sides considered the Paul case, Judge Peckham arguing that the latter case was like death by drowning; that it did not produce a disease, but sudden death without disease and from causes without the person or control of the sufferer; that from the evidence of the expert physicians called for, the plaintiff showed clearly to his mind that death from pustule was regarded generally by the medical world as death from disease; that the definition given by them as to the difficulty being "a pathological condition of the body and not a disease, is upon these facts entirely too fragile to base a recovery upon."

Judge O'Brien considered in the dissenting opinion, that the case was identical in principle with the "Paul" case and "that an infliction of animal virus by some exterior force or power" "was a bodily injury effected through external, violent and accidental means."

In this case, although the judges of the court of last resort were divided, the view of the majority of the court is that the cause of death, while in its nature somewhat accidental, was yet from a disease; that a recovery could no more properly be had than if the insured had inadvertently passed through a hospital filled with persons sick with scarlet fever or small-pox, and had contracted by infection either of those diseases. It is therefore decided in the State of New York that death from malignant pustule, contracted by contact, is not an accident as against an accident-insurance company.

SYPHILIS OF THE LUNG.

IN view of the interest at present taken in this subject, and in connection with the paper by Dr. T. E. Satterthwaite, recently published in the JOURNAL, a paper by Dr. W. T. Councilman,[1] of Johns Hopkins University, on the subject is especially interesting.

After going over the history of the subject, Dr. Councilman describes fully two typical cases of syphilis of the lung, which died at the hospital. In one, especially, the extent and acuteness of the lesions offered the most favorable opportunity for the study of the process. In concluding the author says that it is interesting to find that the essential process in the production of gummata in the lung is a pneumonia with fibrinous exudation, accompanied by fibrous thickening of the alveolar walls, the whole undergoing caseation. It would seem that the gummata were produced where the action of the virus was most intense. Necrosis of the tissue takes place before there is time given for the development of connective tissue. The large gummata which were surrounded by the connective tissue had sharp edges, and there seemed to be no advance of the necrosis. The smaller ones, which were surrounded by the acutely-altered lung with exudation in the alveoli, were increasing by an extension of the necrosis. Where the action of the virus was less intense there was time given for the development of connective tissue, which in some instances seemed to grow into the altered lung from the fibrous tissue around the arteries and bronchi. In other instances the connective tissue apparently developed from the walls of the alveoli.

The close analogy between tuberculosis and syphilis of the lung is shown by the formation of the gumma, being essentially a caseous pneumonia. The chief lesions in the tuberculous lung are the results of a caseous pneumonia, but there is a wide difference in the nature of the processes. The tuberculous caseous pneumonia is the direct action of the tubercle bacilli on the tissue. The exudation is almost entirely cellular, and the result is a mass of dead cells which can undergo no further change except a liquefaction of the cells themselves or the substance between them, as the result of either the further action of the tubercle bacilli or other organisms which have entered the tissue. In the gumma the primary process is the atrophy of the alveolar walls, due most probably, to a hyaline degeneration of the capillaries. The whole thing, the epithelial cells within the alveoli, the vessels and the alveolar walls, all gradually undergo the hyaline metamorphosis and become changed into a dense solid mass of hyaline. This hyaline seems to be one of the most resistant substances, and when once formed shows no more tendency to undergo further change than does the closely related amyloid substance. The author considers that there is no such condition as syphilitic phthisis. In the syphilis of the lung there is only the production of connective tissue and the dense hyaline gummata. There is an entire absence of the ulcerative processes which we find in tuberculosis. Instead of a caseous bronchitis, with destruction of their walls, there is the same process of connective tissue formation in the bronchi leading to their obliteration that we find in the alveoli. There may be bronchiectases produced by effects of the contraction of the fibrous tissue which has formed around the neighboring bronchi. In some of the other cases reported there were cavities described with perfectly smooth walls, which were almost certainly bronchiectases. One cannot make much of the cases reported. Most of them were published before the discovery of Koch, when our means for diagnosticating tuberculosis were not so accurate as they are now. A case was recently reported by Potain of mixed syphilis and tuberculosis. The author regarded this as an attack of the tubercle bacilli on the syphilitic product.

In both of the cases reported sections were stained and examined for tubercle bacilli, but in neither case were any found. The important point which has come out in this investigation, is the hyaline degeneration of the capillaries. It would not do to claim this as a special effect of the syphilitic virus in all syphilitic lesions, but in the lung it certainly seemed to be the primary lesion. The mode of formation of the gummata by a pneumonia, with a termination in necrosis, is also interesting, because in this way most of the tuberculous lesions in the lungs are formed. The hyaline degeneration of the capillaries, of the cells in the exudation, and of the necrotic masses, would seem to be a special feature in syphilis. Another feature which was most prominent was the absence of leucocytes in the exudation, although all the conditions which they usually accompany seemed to be present. It is probable that the hyaline and thickened vessels offered a greater impediment to their exit.

[1] The Johns Hopkins Hospital Bulletin, No. 11, 1891.

THERAPEUTIC NOTES.

SPASM OF THE GLOTTIS. — Sir Morell Mackenzie finds that by exciting a rival reflex, the laryngeal spasm is at once overcome. By exciting a paroxysm of sneezing, immediate relief is procured. This is best done by the inhalation of a pinch of snuff into the nares, or pepper may be used in the same way. It is sometimes possible to produce sneezing by tickling the nasal mucous membrane.

ECZEMA OF THE ANUS AND GENITAL ORGANS. — Lustgarten advises the following ointment:

℞ Oleate of cocaine . . . gr. xij to xxiv.
Lanolin . . . . . ʒ i.
Olive oil . . . . . ʒ ij. M.

Apply twice daily, and after each application powder the affected part with an absorbent powder.

IRRITATING EYE-WASHES. — Franke[1] calls attention to the fact, that the instillation of solutions of atropin, eserin and cocaine into the eye frequently gives rise to acute conjunctivitis. The reason of this is that these solutions are not antiseptic and generally contain mould or fungi. If these remedies are added in the desired proportion to a 1 : 10,000 solution of bichloride of mercury, they will be kept antiseptic for an indefinite period, and not give rise to any irritative symptoms.

STYRONE IN CHRONIC PURULENT OTITIS MEDIA. — Cheltsoff[2] ascribes great value to styrone in the treatment of middle-ear disease. Very good results were obtained by syringing with the following:

℞ Styrone . . . . . gr. xx.
Alcohol . . . . . ʒ j. M.
Sig. One part of the above to 20 parts of water.

ICHTHYOL. — Unna recommends the use of this substance in the form of a varnish, which may be painted on to the skin:

℞ Ichthyol } aa 40 parts.
Starch }
Albumen (in solution) . . . 1 part.
Water . . . . . 100 parts. M.

Mix the starch with the water, then add the ichthyol and the albumen.

℞ Ichthyol . . . . . 50 parts.
Starch . . . . . 100 parts.
Carbolic acid . . . . . 5 parts.
Water . . . . . 45 parts. M.

Dissolve the ichthyol and carbolic acid in hot water, and add the starch.

ERYSIPELAS. — Cayet[3] has obtained the best results by spraying the following solution on to the affected parts three times a day for about a minute:

℞ Hydrargyri chloridi corrosivi } aa gr. xxiv.
Acidi citrici }
Alcohol . . . . . ʒ ij.
Ætheris . . . . . ʒ v. M.

SULPHATE OF COPPER IN OBSTETRICS. — Tarnier[4] has for some time been using a five per cent. solution of sulphate of copper for washing out the uterus and vagina after delivery, and is very well satisfied with the results. From control experiments made with streptococci and staphylococci, and from his clinical experience he believes that he has proved that in this substance we have a readily obtainable, cheap, very soluble, relatively non-toxic, and an unusually active disinfectant; although it is not entirely free from disadvantages. In cases where corrosive sublimate is contraindicated, sulphate of copper should, he thinks, have the preference over every other antiseptic.

[1] Deutsche Med.-Zeitung, May 4th.
[2] Bolnitchnaya Gazeta Botkina, May 9, 1890.
[3] Centralbl. für Klin. Med., April 26th.
[4] Centralblatt für Gynäkologie, May 9th.

Correspondence.

THE EFFECT OF TOBACCO ON PREGNANCY.

CHICAGO, June 15, 1891.

MR. EDITOR: — I would like an expert opinion in the following somewhat unusual case. A married lady friend of mine, who occasionally does me the honor to consult me upon obstruse problems of various kinds is now in the second month of pregnancy with her first child. She is thirty-two years of age, married two years, very anxious to bear healthy offspring. Since her marriage she has acquired the habit of indulging in a quiet smoke, with or without her husband, but entirely with his approval. Smokes about three small pipes of mild tobacco a day. Over-indulgence — say a large pipe — produces nausea; cigars produce violent nausea. But within her usual limit the practice seems beneficial to her. She is of the nervo-sanguine temperament, very excitable, and small doses of the fragrant weed "settle her nerves," to use her own expression. The practice has become a habit.

(1) What would be the effect upon the health of mother and embryo, especially the latter?

(2) Should the practice, of necessity, be given up during pregnancy?

(3) What would be the effect upon lactation?

Opinions will greatly oblige PHARMA.

N. B. The patient spoken of above has a slight (compensated) mitral regurgitation, but has not suffered from it recently.

[We have had no personal experience which would warrant our giving an expert opinion of this case; but the well-known experience of Spanish women would seem to indicate that tobacco does not necessarily exert any untoward effect on the gentler sex. We would answer the questions propounded, namely:

(1) It does not seem reasonable that tobacco, used as moderately as by the woman in question, would produce any ill effect on either mother or embryo; indeed, it is not unlikely that in the above case the effect of the weed is beneficial to the mother.

(2) No; certainly not so long as there is no apparent ill effect.

(3) Probably no effect. ED.]

METEOROLOGICAL RECORD,

For the week ending June 20, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S...14	30.01	75	88	63	57	44	50	W.	W.	9	10	F.	C.	
M..15	29.91	81	95	67	53	51	52	W.	W.	11	3	C.	C.	
T..16	29.79	85	96	73	46	57	51	W.	W.	12	10	F.	O.	
W.17	29.87	61	69	53	81	97	+9	N.E.	N.E.	20	18	O.	R.	†
T..18	29.90	51	53	49	90	100	95	N.E.	N.E.	24	12	R.	R.	.82
F..19	29.84	54	59	50	97	100	98	N.E.	E.	11	10	R.	R.	.06
S..20	29.92	57	60	54	100	100	100	N.E.	N.E.	7	4	O.	O.	.14
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 20, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	952	447	23.87	13.97	12.21	.22	3.41
Chicago	1,099,850	448	189	21.12	11.66	3.30	9.90	2.64
Philadelphia	1,046,964	443	201	23.92	5.06	16.10	1.61	2.76
Brooklyn	806,343	436	218	23.00	10.58	11.96	.23	5.06
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	210	63	17.52	5.94	8.76	2.19	2.92
Baltimore	434,439	137	56	9.40	11.75	4.70	.94	2.35
Cincinnati	296,908	117	45	17.60	3.40	9.35	5.95	—
Cleveland	262,000	87	37	15.47	10.71	7.14	2.38	4.76
Pittsburg	240,000	107	52	25.11	4.65	13.02	2.79	3.72
Milwaukee	240,000	86	48	13.62	12.76	2.32	—	6.96
Washington	230,392	140	75	26.27	7.81	21.30	.71	2.13
Nashville	76,168	40	14	17.50	10.00	17.50	—	—
Charleston	65,103	45	21	11.11	4.44	11.11	—	—
Portland	36,425	16	5	6.25	—	—	—	—
Worcester	84,655	27	12	22.22	11.11	7.40	—	3.70
Lowell	77,696	37	17	32.40	5.40	21.60	2.70	—
Fall River	74,398	—	—	—	—	—	—	—
Cambridge	70,028	26	13	15.40	7.70	11.55	—	3.85
Lynn	55,727	14	5	—	7.14	—	—	—
Lawrence	44,654	18	8	11.11	11.11	11.11	—	—
Springfield	44,179	16	2	12.50	12.50	12.50	—	—
New Bedford	40,733	15	2	—	20.00	—	—	—
Salem	30,801	15	5	—	13.33	—	—	—
Chelsea	27,909	12	5	8.33	33.33	—	—	8.33
Haverhill	27,412	12	5	8.33	8.33	—	—	8.33
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	4	1	—	—	—	—	—
Gloucester	24,651	11	3	18.18	—	9.09	—	—
Newton	24,379	3	0	—	66.66	—	—	—
Malden	23,031	10	3	10.00	10.00	10.00	—	—
Fitchburg	22,037	5	2	—	—	—	—	—
Waltham	18,707	4	0	—	25.00	—	—	—
Pittsfield	17,281	—	—	—	—	—	—	—
Quincy	16,723	7	1	—	—	—	—	—
Newburyport	13,947	2	1	—	50.00	—	—	—
Brookline	12,103	—	—	—	—	—	—	—
Medford	11,079	4	3	—	—	—	—	—
Hyde Park	10,193	6	0	—	16.66	—	—	—
Peabody	10,158	4	0	—	—	—	—	—

Deaths reported 3,516: under five years of age 1,556; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 714, acute lung diseases 355, consumption 354, diarrhœal diseases 304, diphtheria and croup 107, typhoid fever 74, scarlet fever 66, measles 35, whooping-cough 26, cerebro-spinal meningitis 17, malarial fever 12, erysipelas 12, puerperal fever one.

From scarlet fever New York 33, Brooklyn 12, Philadelphia 10, Chicago 5, Baltimore 4, Milwaukee and Lowell 1 each. From measles New York 16, Chicago 6, Brooklyn 5, Cincinnati 2, Philadelphia, Boston, Pittsburgh, Portland, Worcester and Lowell 1 each. From whooping-cough New York 9, Philadelphia, Brooklyn and Pittsburgh 4 each, Milwaukee 2, Chicago, Baltimore and Cleveland 1 each. From cerebro-spinal meningitis Chicago 8, Washington 3, Worcester 2, New York, Brooklyn, Milwaukee and Gloucester 1 each. From malarial fever New York 9, Brooklyn 2, Pittsburgh 1. From erysipelas New York 5, Chicago 4, Brooklyn, Boston and Lowell 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,388,441, for the week ending June 6th, the death-rate was 28.3. Deaths reported 5,102: acute lung diseases (London) 547, whooping-cough 152, measles 85, diarrhœa 38, diphtheria 35, fever 25, scarlet fever 23, small-pox (London) one.

The death-rates ranged from 16.5 in Norwich to 48.5 in Blackburn, Bradford 29.1, Hull 17.8, Leeds 24.9, Leicester 30.4, Liverpool 35.5, London 27.0, Manchester 39.7, Nottingham 24.0, Sheffield 18.9, Sunderland 21.8, Wolverhampton 35.9.

In Edinburgh 24.3, Glasgow 27.9, Dublin 20.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 20, 1891, TO JUNE 26, 1891.

By direction of the Acting Secretary of War, the leave of absence on surgeon's certificate of disability, granted Major JULIUS H. PATZKI, surgeon, in S. O. No. 99, May 1, 1891, from this office, is extended two months on surgeon's certificate of disability. Par. 15, S. O. 142, A. G. O. June 22, 1891.

By direction of the Secretary of War, Captain WILLIAM C. BORDEN, assistant surgeon, will, upon the final abandonment of Fort Davis, Tex., report in person to the commanding officer Jackson Barracks, La., for duty at that post. Par. 4, S. O. 139, A. G. O. June 18, 1891.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JUNE 27, 1891.

Surgeon J. H. HALL, from Naval Station, New London, and to Naval Hospital, Chelsea, Mass.

Passed assistant surgeon L. W. ATLEE, from nautical schoolship "Saratoga" and wait orders.

Passed assistant surgeon J. M. STEELE, ordered to nautical school-ship "Saratoga."

Assistant surgeon G. A. LUNG, ordered to Naval Station, New London, Conn.

Assistant surgeon J. E. PAGE, from Naval Hospital, Mare Island, and to the "Independence."

Assistant surgeon M. R. PIGOTT, from U. S. Receiving-ship "Independence" and to Naval Hospital, Mare Island, Cal.

Assistant Surgeon J. G. FIELD, detached from U. S. S. "Omaha" and granted three months' leave of absence.

FREDERICK GRATTON BRATHWAITE, of Stamford, Conn., commissioned an assistant surgeon in the Navy, June 22, 1891.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING JUNE 27, 1891.

HAMILTON, J. B., surgeon, ordered to Washington, D. C., on special duty, June 9, 1891.

GEDDINGS, H. D., assistant surgeon, ordered to New York, N. Y., on special duty, June 13, 1891. Ordered to Washington, D. C., on special duty, June 26, 1891.

WERTENBAKER, C. P., assistant surgeon. When relieved at Galveston, Texas, to proceed to Chicago, Ill., for duty, June 23, 1891.

SMITH, A. C., assistant surgeon. Relieved from duty at New Orleans, La.; ordered to Galveston, Texas, June 23, 1891.

STIMPSON, W. G., assistant surgeon. Ordered to New York, N. Y., for temporary duty, June 12, 1891.

ROSENAU, M. J., assistant surgeon. When relieved at Chicago, Ill., to proceed to New Orleans, La., for duty, June 23, 1891.

SOCIETY NOTICES.

THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS will hold its fourth annual meeting at the New York Academy of Medicine, 17 West Forty-third Street, in the City of New York, Thursday, Friday and Saturday, September 17, 18 and 19, 1891, under the presidency of Dr. Adam H. Wright, of Toronto. All physicians interested in the discussion of subjects pertaining to Abdominal Surgery, Obstetrics, and Gynecology, are invited to attend without further formal notice. By order of the Executive Council.

WILLIAM WARREN POTTER, M.D., *Secretary*.

SECOND TRIENNIAL SESSION OF THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.—The Committee of Arrangements announces under date of June 24, 1891, that the arrangements are sufficiently advanced to insure the success of the Second Triennial Session of the Congress of American Physicians and Surgeons, which will be held in Washington, D. C., during the 22d, 23d, 24th and 25th of September, 1891. The sessions of the Congress will be held in the Main Hall of the Grand Army Building, 1412 and 1414 Pennsylvania Avenue, from 3 to 6 P. M., daily. The President's Address will be delivered in the Lecture Hall of the National Museum, Wednesday, September 23d, at 8 P. M., followed by the Reception of the President, from 9.30 till 12. Order of Executive Committee. The Army Medical Museum will be open the same evening. The Congress will be composed of the members of the constituent societies and invited guests. A registration fee of five dollars will be required of every member of the constituent societies who may register; invited guests will not pay the fee. The evenings of Tuesday, September 22d, and Thursday, September 24th, are left to the societies. Members of the American Surgical Association and of the Association of American Physicians will conjointly entertain their foreign guests at dinner at the Arlington Hotel, Thursday, September 24th, at 8 P. M. The American Gynecological Society has also arranged for a dinner at the Arlington Hotel, Thursday evening, September 24th. The American Pediatric Society give a dinner September 24th.

SAMUEL C. BUSEY, M.D., *Chairman*,
1545 I Street, N.W., Washington, D. C.

BOOKS AND PAMPHLETS RECEIVED.

Catalogue of the Albany Medical College, Medical Department of Union University. Sixtieth Session, 1890-91, and Announcement for Session, 1891-92.

Original Articles.

PRELIMINARY REPORT ON THE CLINICAL USE OF TUBERCULIN.[1]

BY HAROLD C. ERNST, M.D.,
Instructor in Bacteriology at the Harvard Medical School.

(Continued from No. 1, page 7.)

THE first set of cases, then, to which I wish to call your attention is that in which the pulmonary lesions were the most prominent; and in this, I have twelve to account for. The histories are as follows:

SECTION I. — PULMONARY. — CASES I–XII.

CASE I. Admitted December 6, 1890. Service of Dr. G. G. Tarbell. Born in Prince Edwards Island, about twenty-two years old, single, table-girl. Maternal grandfather and brother died of phthisis. Was always well until one year ago. The disease began, following an attack of influenza; loss of weight and appetite; night sweats; pain in the right side, diarrhœa last summer. General health fair; no hæmorrhages; is well developed; somewhat emaciated and pale; poor strength, poor nutrition and appetite; sleep good except when coughing; skin moist; suffers from chills, fever, night sweats; temperature 98.4° pulse 108; respiration 32; breathing shallow, with considerable cough; thick, yellow expectoration; no record of bacilli at entrance; suffers from pain in the right chest; stools negative; urine December, 1890, high, acid, 1017, no albumen; abdomen normal. Physical examination on December 6th, shows the vocal resonance increased at the right summit; dulness over right front and back; bronchial respiration and bronchophony in the upper half of the right front and back; also numerous fine and coarse moist râles at the same place; respiration more markedly bronchial over a small area of the right back between the scapular and the vertebral column; respiration on the left side harsh only.

January 1st. Dose, .0004 gm. Dizzy and headache in the afternoon; diminished appetite; slight nausea; increase of cough; increase of sputum (mucopurulent); signs in the chest same as yesterday.

March 10th. A slight shivering at night. Upon the 13th allowed to go home for a day or two, and did not return.

Summary. — Number of injections 16; amount used 41 mg.; highest dose 4.5 mg.; highest temperature 104.4° after the seventh injection of two milligrammes. Not relieved.

CASE II. Lives in Boston. Admitted December 13, 1891. Service of Dr. G. G. Tarbell. Born in New York, thirty-one years of age, single, peddler. Mother died of phthisis. Was always well until one year ago. Slight cough was the first symptom. General health fair. Hæmorrhage of from two to three cupfuls in the summer of 1890, and a second one eight weeks ago, lasting for three days. Is well developed; pale; poor strength; emaciated looking. Fair appetite and sleep. Herpes on chin, and left face. Heart and circulation negative.

On December 31st, there was dulness to the third rib. Bronchial respiration, with slight bronchophony; a few fine moist râles in the upper right front. Respiration was harsh on the right side of the chest. The left front, and both backs were negative, except that the percussion note, was slightly higher on the upper right back than on the left.

January 1, 1891, the first injection of .0004 gm. Slight diarrhœa, probably due to jellies and fruit.

March 30th. Went out for a week. Bacilli, No. 5. Weight 105½ pounds.

April 9th. Reported. There was no vacant bed, and so not admitted.

Summary. — Number of injections, 33; amount of material used, 252.8 mg.; highest dose was 16 mg.; highest temperature was 103.6°, after the thirty-third injection of 4.8 milligrammes. Not relieved. For a time patient gained weight, and the bacilli disappeared from the sputum: they returned, however, and weight diminished also.

CASE III. Lives in Boston. Admitted December 29, 1890. Service of Dr. G. G. Tarbell. Born in Germany, thirty-two years old, married, tailor. Father died of some throat trouble. Date of commencement of disease four years ago, after an attack of bronchitis. Two years ago caught cold, and was in bed with lung fever. General health fair. Hæmorrhage six weeks ago; spit up a cupful of bright red, frothy blood. Well developed (anæmic); fair strength; good nutrition; fair appetite; good sleep; stools negative; second pulmonic sound accentuated; severe night sweats; temperature 98.5°, pulse 88, respiration 26; expectoration yellowish and white, sometimes streaked with blood. Troubled with cough, hoarseness and sore throat, which persisted although he had been at work. July, 1890, entered the Consumptives' Home, where he has made some general gain.

Physical examination shows that the chest moves equally with respiration; there is a depression above each clavicle. Percussion is dull at the right apex, front, and at the left base back. Respiration is harsh in the upper half of the right front, bronchial at the right summit, with numerous fine and medium moist râles at the right apex; also fewer in number throughout the right chest; voice-sounds slightly increased on the right; on the left, on cough only, a few fine moist râles at the apex; respiration rather harsh; voice-sounds slightly increased, with a few fine, moist râles.

January 1st. Dose, .004 gm. Slight headache at 4 P. M; increased pain over the left apex, the right front and the left base.

April 1st. Bacilli, No. 7. Weight 167½ pounds.

Summary. — Number of injections, 35; amount used, 227.8 mg.; highest dose, 12.2 mg.; highest temperature, 101.8°, after the thirteenth injection of 4.8 mg., this temperature being exclusive of the florid stage of the disease. Not relieved. Made an apparent gain in general condition, and weighed seven pounds more at the end of treatment; but the bacilli did not disappear from the sputum.

CASE IV. Lives in Boston. Admitted January 2, 1891. Service of Dr. G. G. Tarbell. Born in New Brunswick, thirty-seven years old, married, teamster. Chancre eighteen years ago; gonorrhœa three times, last three years ago. Pneumonia in 1885. Had a cough ever since. General health, fair. Well-developed; fair strength, fair nutrition, good appetite and fair sleep; skin normal, except at lesions; heart and circulation negative; no chills, no fever, no night sweats; cough less severe within the last two months; expectoration slight, whitish; stools negative; urine pale, alkaline, 1009, no albumen; abdomen nega-

[1] Read before the Boston Society for Medical Improvement, May 11, 1891.

tive. About one year ago, had a large, round swelling appear just below the larynx, which increased until it became of the size of an English walnut. It was then opened in out-patient department. Other similar swellings have appeared upon the neck, some of which have been opened. Skin reddened and indurated, and lies in folds about the neck, with deep depressions. No discharge; not painful or tender; no difficulty in swallowing. Slight dulness, and a few moist râles at the right apex, front and back.

January 3d. Dose, .0006 gm. Some oozing from the sinuses on the neck; one fold much increased and tense. The areola surrounding the sinuses slightly red.

April 13th. Treatment omitted.

Summary.— Number of injections, 36; amount used, 264.5 mg.; highest dose, 14 mg.; highest temperature, 101.6°, after ninth injection of .004 gm. Discharged, relieved; because the bacilli had been gone from the sputum most of the time, and he had gained nearly ten pounds in weight. Lesions of neck not improved.

CASE V. Boston. Admitted December 31, 1890. Service of Drs. Forster and Blake. Born in Ireland, thirty years old, single, sailor. Family history negative. General health fair. Tongue tremulous, coated; face flushed; pupils dilated. Well-developed; good strength and nutrition; poor appetite and poor sleep; heart and circulation negative; pain in both chests; urine normal, acid, 1020, no albumen; abdomen negative. Was in City Hospital from December 12th to 23d, with phthisis; discharged relieved. Comes in alcoholic; has been drinking. Complains of shortness of breath and pain in both chests, nervousness; cannot sleep. Examination shows dulness at the left apex to the second rib in front and the second behind. Broncho-vesicular breathing; increased voice and fremitus; and many fine, moist râles at the right apex; breathing harsh.

January 5th. Dose, .0005 gm., given by Dr. Forster. Slight dulness at both apices. On the right side, râles to the third rib in front and the spine of the scapula behind. On the left side, râles to the seventh rib in front and the left scapula behind. Respiration very slightly broncho-vesicular.

February 14th. Left apex; dulness to third rib in front; increased voice and fremitus; moist râles on deep breathing. Right apex; less dulness; fine, crepitent râles at end of inspiration. Patient discharged to-day for repeated profanity and disobedience to the rules.

Summary. — Number of injections, 19; amount of material used, 93.4 mg. Highest temperature 102°, on the sixth day after the sixth injection of 3.2 mg. Not relieved. Gained in weight. Bacilli never found.

April 25th. Patient drinking hard.

CASE VI. Lives in Boston. Admitted January 6, 1891. Service of Dr. G. G. Tarbell. Born in Pennsylvania, twenty-five years old, single, a physician. Both father and mother died of phthisis, and eleven out of thirteen children. Had diphtheria at fourteen. Disease began three years ago, following a cold. General health fair; menstruation regular; had a hæmorrhage two years ago. Good development, but anæmic; fair strength; good nutrition, appetite and sleep; heart and circulation negative; no chills; slight fever; occasional night sweats; moderate cough; slight expectoration; bacilli found in the sputum at various times; slight pain; stools normal; urine negative, acid, 1022, faint trace of albumen, sediment consisting of leucocytes and bladder epithelium; abdomen negative. Caught cold three years ago, and had a cough for some time; then was better till two years ago; then got another cold, followed by a cough and a hæmorrhage of about one-half a cupful. Has coughed more or less ever since; has not lost much flesh or strength. Spent four months in Denver in the winter of 1889; but was not so well as in Boston. Had an attack of pleurisy there: returned to Boston last spring, and has been at work ever since.

Examination shows a well-developed and nourished girl; dulness at the right apex, front and back, as far as the third rib. Vocal resonance increased over the upper right third of the back and front; bronchophony with bronchial respiration over the upper third of the right front, with fine, moist râles; also fine, moist râles in other parts of the right chest and the apex of the left. A few râles in the middle of the left back. Heart and abdomen negative.

January 7th. Dose, .0008 gm. Slight headache; good sleep; slight increase of cough; bacilli in the sputum, Nos. 5 and 6. Weight 124¾ pounds.

April 9th. Treatment omitted for the purposes of this paper. Bacilli, No. 3.

April 25th. Patient seen, and claims to have felt a great benefit from the treatment. Bacilli in the sputum in enormous numbers.

Summary. — Number of injections, 38; amount used 347.6 mg.; highest dose 10 mg.; highest temperature 101.4°, after the thirty-third injection of six mg.

May 2d. Not improved. Gain in weight steady up to end of treatment, but slight.

CASE VII. Lives in Charlestown. Admitted January 7, 1891. Service of Dr. Forster and Blake. Born in Ireland, thirty-two years old, longshoreman. Family history good. Gonorrhœa fifteen years ago. Disease commenced two months ago; cough and expectoration. General health good. Alcohol and tobacco. Slight hæmorrhages from time to time. Well-developed; good strength; fair nutrition, appetite and sleep; heart and circulation negative; occasional night sweats; dyspnœa for a few weeks; slight cough; slight expectoration; stools regular; urine normal, acid, 1028, no albumen; abdomen negative. Has not lost weight nor strength. Physical examination showed him well-developed and nourished. Tongue coated white. Lungs: good resonance throughout, except at the right apex behind, where it is somewhat dull, and where respiration is harsh and high-pitched; no râles.

January 10th. Dose .0006 gm.

April 3d. Examination of the lungs (Dr. Mason). Percussion about the same on both sides. Right lung, front: harsh breathing at apex, but expiration not notably prolonged; fine subcrepitant râles throughout the front, especially between the second and third ribs; fine râles on cough. Left lung: normal. Behind: in right supra-scapular fossa, expiratory murmur slightly prolonged and harsh; very few fine râles, with cough; vocal resonance distinctly increased; faint bronchial whisper. The patient has had no hæmoptysis since entrance; no night sweats; no dyspnœa. Good appetite; sleeps well. Slight congestion of hands. Has gained three pounds since entrance (169 to 172).

April 4th. Asks to go out.

Sputum: April 3d, 0; April 2d, 0; April 4th, 1.

April 11th. Hæmoglobin test, 93%.

Summary. — Number of injections, 35; amount used, 287.6 mg.; highest dose, 10.8 mg.; highest temperature, 100.4°, after the twelfth injection of ten mg. Discharged relieved. General condition good. Slight, but constant gain in weight during treatment. Bacilli absent from sputum most of the time.

Case VIII. Lives in Boston. Admitted January 10, 1891. Service of Dr. G. G. Tarbell. Born in Prince Edwards Island, forty-three years old, married, machinist. Mother had hæmorrhage of the lungs, and died at fifty-six years of age. One brother and two sisters died of phthisis. Was always well until last summer. General health is poor; had a hæmorrhage five months ago. Is well developed; pale; poor strength; somewhat emaciated; fair appetite; good sleep; heart and circulation negative; has had chills, fever and night sweats. Breathing is poor; coughs in the morning and evening; expectoration yellowish, and occasionally streaked with blood. Bacilli were found by Dr. Gannett. Slight pain. Urine high, acid, 1024, no albumen. Five months ago, after a hacking cough for some months, spit up three mouthfuls of bright red blood after exercise. Three or four similar attacks at that time, about thirty-six hours apart. Was weak, and stopped work. Severe night sweats, which stopped under treatment. Cough was persistent, chiefly in the morning and the evening, with yellowish sputum, occasionally streaked with blood. Appetite fair, but some loss of strength. Is stronger than last summer and able to do light work of late.

January 11th. Dose, .001 gm. Good sleep; increased pain in the left side; sputum watery.

April 9th. Signs in the chest about as before. General condition very good.

Summary. — Number of injections, 32; amount used 301.8 mg. Highest dose 14.4 mg. Highest temperature 101.4°, after the twenty-second injection, of twelve milligrammes.

April 29th. Diminished resonance; medium and fine moist râles over left front; right front normal; diminished resonance, and fine and medium moist râles over left back; right back normal. Weight 148½ pounds. Bacilli, No. 2. General condition good.

Discharged, not relieved. A gain of about five pounds during treatment. General condition about the same.

Case IX. Waltham. Admitted January 21, 1891. Service of Dr. F. C. Shattuck. Born in Nova Scotia, thirty-two years old, married, type-setter. Sister died at twenty, of some lung trouble of short duration. Maternal grandmother and his maternal uncle and his children died of phthisis. Disease began six months ago with a cough and gastric disturbance; slight expectoration. General health good, except constipation. Lost about twenty-five pounds. Is of anæmic appearance; fair strength; slightly emaciated; good appetite; sleep good, excepting when he coughs; slight accentuation of the second pulmonic heart sound; no night sweats, but a good deal of cough; slight expectoration; bacilli found in the sputum before entrance; some stinging and aching pains in the upper right chest; slight nausea; urine normal, acid, 1052, no albumen; abdomen negative.

Physical examination showed right upper and anterior portion less prominent than the left; infra- and supra-clavicular portions rather hollow. Sides move about equally in respiration. The lungs (right), at the apex, anterior and posterior, show slight dulness and broncho-vesicular respiration; anteriorly, scanty râles on breathing and cough, to the second rib; posteriorly, at the apex and along the para-spinal region, one-third of the way down the back, scanty, fine, moist râles; on the left, a few râles at the apex, front and back, with small limited area, with same signs as above; same in the anterior axillary line.

January 23d. Dose, .0005 gm. Poor sleep; nausea in the afternoon; quantity of expectoration diminished.

April 9th. Dose, .006 gm. Pain increased towards morning. Bacilli in the sputum, No. 3.

Summary. — Number of injections, 32; amount used 111.8 mg. Highest dose six mg. Highest temperature 101°, after the third injection of 3.2 mg.

April 29th. Rides a bicycle ten miles a day. Feels much better. Weight, 136 pounds. Physical examination shows slightly diminished resonance to third rib on right front; fine and medium moist râles after cough; increased vocal fremitus and bronchophony: left front normal; right back, few fine, moist râles about the middle of the scapula; left back normal. Could raise no sputum for examination.

Discharged, relieved. A gain in weight of about six pounds during treatment. Especially a gain in general condition.

Case X. Boston. Admitted February 2, 1891. Service of Dr. A. N. Sumner. Born in England, sixteen years of age, school-girl. Lost one brother and sister of phthisis. Had influenza last winter. Disease began, following it, with cough. General health fair; fairly well developed; fair strength, nutrition, appetite and sleep; slight flushing of cheeks; heart tumultuous and rapid, otherwise negative; slight night sweats some time ago; temperature 98.4°; pulse 116; respiration 30; cough constant, increases in morning; expectoration not profuse, no blood; bacilli were found in the sputum; slight pain in the chest; tongue clean; abdomen negative.

Physical examination shows diminished respiration at the right apex, to the second rib. Respiration is not especially altered. Slightly increased vocal resonance; no râles heard. The remainder of the right front normal; left front negative, except harsh and prolonged expiration. The right back dull to the angle of the scapula; broncho-vesicular respiration and dry râles; vocal fremitus increased. At left back, area of dulness extends down to the left scapula; broncho-vesicular respiration; fine, dry, crackly râles.

February 4th. Dose, .0006 gm. Numerous bacilli in sputum. Weight 88 pounds.

March 10th. Tired all the time. Much headache; abdominal pains; cough not troublesome; small amount of expectoration. In the right front, slightly increased dulness; fine, dry râles also heard. Upper left front, signs distinctly, but not markedly increased since entrance. Both backs do not differ materially from entrance, but about the same. Sleep fair; appetite poor; strength slightly diminished.

Summary. — Number of injections, 8; amount used 14.2 mg. Largest dose 2.4 mg. Highest temperature 102.8°, after the third injection, of 1.8 mg. Discharged, not relieved.

Case XI. Boston. Admitted January 14, 1891. Service of Dr. E. H. Bradford. Born in Maine, thirty

years old, married, printer. Family history good. Had severe sore throat four years ago, since then white and yellowish sputum at times. Fell on the knee in July, 1890. General health poor; lost from ten to fifteen pounds in weight. Of poor development, poor strength, nutrition and appetite; fair sleep; heart and circulation negative; night cough; white yellowish expectoration; bacilli found in the sputum; urine, acid, normal, 1026, no albumen; abdomen negative. His knee is now partly flexed; considerable swelling, especially on the inside, not conforming to the cavity of the joints. The patella does not float. There is great pain and sensitiveness. Plaster applied.

On February 8th, physical examination shows dulness over the left apex, and moist râles; increased vocal resonance, and diminished respiratory murmur over the whole left chest; the râles quite fine above, and medium and moderately coarse below.

February 7th. Bacilli, No. 1. Urine, pale, acid, 1020, no albumen.

February 8th. Dose, .0013 gm. Quantity of sputum increased.

April 14th. Dose, .006 gm. Patient never had any marked general reaction from the treatment, which was temporarily omitted to-day for the purposes of this paper.

Summary. — Number of injections, 27; amount used 171.9 mg. Highest dose 10 mg. Highest temperature was 101°, after the fourth injection, of 7.2 mg. Discharged, much relieved.

May 5th. Sputum examinations showed a very marked diminution in the number of the bacilli. The knee not much improved.

CASE XII. Boston. Admitted February 25, 1891. Service of Dr. T. M. Rotch. Born in Russia, forty-five years old, married, shoemaker. Family history negative, former history good. Commenced three years ago with a cough. Been hoarse for nine months. Showed loss of strength and flesh for the last year. Nutrition fair; fair appetite; heart and circulation negative; night sweats; temperature 99°; pulse 96; respiration 28; troubled with dyspnœa; cough worse in the morning; slight increase in expectoration; pain in the left chest and back; stools and abdomen negative. Examination showed lips to be cyanotic; the voice hoarse; color good; tongue moist and white; respiration quiet; pulse of good strength and regular. Lungs at both apices show slight dulness, diminishing to the second rib, and a few fine, moist râles; no bronchial breathing; below, respiration is somewhat harsh; back shows a few moist râles in upper left side.

February 28th. Seemed to have been helped by respirator. Several muco-purulent expectorations daily. Pain in the left side.

March 2d. Bacilli on March 1st, No. 6. Weight 128 pounds. Hæmoglobin, 75 per cent.

March 3d. Urine, normal, clear, 1018, albumen showed very slight trace; leucocytes and bladder cells.

March 6th. Dose, .0008 gm.

April 14th. .008 gm.

Summary.— Number of injections, 18; amount used 63.4 mg. Highest dose .0048. Highest temperature 160°, the second day after injection No. 15, of .0048 gm. Discharged, relieved. Bacilli disappeared very markedly from the sputum.

Of these cases, most were of from six months to five years standing. The two, in which the history extended for shorter time than this, were Case 5, in which the bacilli were never found, and Case 7, in which there was a record of a cough for only two months. Case 5 may possibly have been one of specific disease, and Case 7 is classified as improved, as will be seen later.

The general summary of the results, as seen in these cases, is as follows:

(1) Not relieved, seven, including Cases 1, 2, 3, 5, (in which the bacilli were never found), 6, 8 and 10. Case 2 was one with the complication of laryngeal and probably abdominal trouble.

(2) Relieved, five, including Cases 4, 7, 9, 11 and 12.

Case 4, (complicated with marked lesions of the skin in the cervical region), is classed as relieved, because of the marked diminution of the bacilli in the sputum, the great gain in weight, and the marked improvement in the general condition. The skin lesions made an improvement for a time, but then stopped, and were no better at the time that the treatment was omitted.

Case 7 is marked relieved, for the reason that the patient showed a slight but constant gain in weight; the bacilli were absent from the sputum most of the time; the general condition was extremely good; and the patient asked to be allowed to go out in order to go to work.

Case 9 is classed as relieved, because of the gradual gain in weight during treatment, and the marked improvement in the general condition, as shown by the patient's ability to take severe exercise without fatigue or pain.

Case 11 (pulmonary tuberculosis complicated with an affection of the knee) is classed as relieved, for the reason that the bacilli showed a very marked and permanent diminution in the sputum, and the signs attracting attention to the chest had much diminished. The knee was not improved.

Case 12 (complicated with laryngeal affection) is classed as improved, for the reason that the bacilli have shown a marked and continuous diminution in the sputum, the laryngeal appearances have cleared up somewhat, and the general condition is improved, with a gain of six pounds in weight.

There were no cases in this class that could be called cured, and no deaths.

(To be continued.)

A SECOND SERIES OF TWO HUNDRED CONSECUTIVE CASES OF MIDWIFERY.[1]

APRIL 14, 1888, TO MARCH 9, 1891.

BY A. WORCESTER, A.M., M.D., WALTHAM, MASS.

ONLY ninety-seven, less than fifty per cent. of these cases are classed as normal as regards both the labor and the convalescence. But, as in thirteen of the cases the birth of the child took place before my arrival, in only four of which was there any trouble; and as in eleven other cases I was called in consultation especially to operate, the proportion of absolutely normal cases occurring in my practice is really fifty-five per cent.

In studying the records of these normal cases, it is difficult to determine and still more difficult to com-

[1] Read by invitation before the Obstetrical Society of Boston, April 11, 1891. The first series of two hundred cases was reported by Dr. Worcester in the Boston Medical and Surgical Journal, vol. CXX, p. 427.

municate the particular advantages, which nevertheless are obtainable only by such study. The ability to decide whether or no a labor is normal in its conditions and progress is of immense advantage, not only in selecting the most favorable time for interference if that be necessary, but even more in stimulating the patient to renewed exertions by making her confident of her labor's happy termination.

Such ability grows out of closest study of the normal as well as of the abnormal cases. I therefore include in this report the dry facts concerning the normal as well as the more interesting data of the abnormal cases.

Seventy-four, or 37 per cent., were i-iparæ, whose average age was twenty-four and a half years; 46, or 23 per cent., were ii-iparæ, average age twenty-eight; 25, or 12½ per cent., were iii-iparæ, average age twenty-nine and a half; 18, or nine per cent., were iv-iparæ, average age thirty-one and a half; nine, or four and a half per cent., were v-iparæ, average age thirty and a half; nine, or four and a half per cent., were vi-iparæ, average age thirty-three; eight, or four per cent., were vii-iparæ, average age thirty-four; three, or one and a half per cent., were viii-iparæ, average age thirty-nine; four, or two per cent., were ix-iparæ, average age thirty-six; two, or one per cent., were x-iparæ; average age thirty-four; one, or one-half per cent., was a xii-iparæ, aged thirty-eight; and in one, or one-half per cent., these facts were not noted.

The average duration of the first stage in 51 i-iparæ was 12 h. 30 m., the longest being 56 h., the shortest 3 h.; the average of 33 i-iparæ in the second stage was 2 h. 30 m., the longest being 4 h. 30 m., the shortest 35 m.

In 39 ii-iparæ the average duration of first stage was 5 h. 36 m., longest 17 h. 45 m., shortest 30 m.; second stage in 36 cases, average 1 h. 20 m., longest 10 h., shortest 15 m.

In 17 iii-iparæ average duration of first stage 7 h. 40 m., longest 17 h., shortest 2 h.; second stage, 17 cases, average 40 m., longest 1 h. 20 m., shortest 15 m.

In nine iv-iparæ average duration of first stage 7 h. 10 m., longest 12 h., shortest 1 h.; in second stage, nine cases, average 45 m., longest 1 h., shortest 20 m.

In six v-iparæ average duration first stage 8 h. 5 m., longest 17 h., shortest 2 h.; second stage, five cases, average 56 m, longest 1 h. 30 m., shortest 20 m.

In 21 women who had borne more than five children the average duration of the first stage was 5 h. 55 m., longest 14 h. 30 m., shortest 2 h.; second stage, 18 cases, average 44 m., longest 1 h. 30 m., shortest 15 m. Of 113 cases the average duration of the third stage was 12 m., the longest 30 m., the shortest 5 m. It is proper to state in this connection that almost never have I left the uterus unaided in the third stage of labor, my practice being to hold the fundus firmly throughout this stage, and to press downwards and backwards at the times of uterine contraction.

As regards the position of the fœtus, out of 155 cases where noted, O. L. A. occurred 111 times, or 71½ per cent.; O. R. P. 22 times, or 14½ per cent.; O. R. A. 18 times, or 11½ per cent.; O. L. P. twice, or 1¼ per cent.; S. R. P. twice, or 1¼ per cent. Thus in 129 cases, 83⅓ per cent., the occiput was anterior. In 26 cases, 16⅔ per cent., it was posterior; in 10 of these cases of posterior position, 39 per cent., operative aid was required; while in 129 cases of anterior position only 22, or 17 per cent., went to operation.

As affecting the duration of labor, in five cases of posterior position in i-iparæ the average duration of the first stage was 17 h. 18 m., of the second, 2 h. 52 m.; while in 30 cases of anterior position in i-iparæ the average duration of the first stage was 12 h. 9 m, and of the second 2 h. 2 m.

Of the thirteen cases where the child was born before my arrival, in two there were slight lacerations, and in two more there were serious lacerations of the perineum. In none of these cases was there any hæmorrhage. Only one child was stillborn and that was a macerated syphilide.

Sixteen of the two hundred pregnancies terminated before full term. Nine of these were abortions proper; in one case the entire fœtal mass was expelled, but in eight cases there being doubt as to the entirety of the expelled mass, I curetted and douched the uterus with bichloride solution (1 to 8000). In three of the five cases of miscarriage, I also curetted and douched the uterus. Recoveries in all these cases were uninterrupted. Of the two cases of premature birth, one child born at seven months died in a few hours, one born at eight months lived.

In 41 cases operative assistance was given. After deducting the eleven cases where I was summoned purposely to operate, it will be found that 16 per cent. of my patients were operated upon. Although reduced from 18 per cent. for my first series of two hundred cases,[1] this is still a large proportion. And either my class of patients differs from that of other practitioners who are able to report only exceptionally finding operative cases, or else I operate too readily.

As to the cases where even with axis traction the delivery was hard, there can be, I suppose, little question of the necessity of the operation. The question becomes more plausible in considering the ten cases where forceps were applied to the head arrested in the inferior straits. In two of these latter cases extraction was difficult; in one there was the impediment of an anchylosed coccyx bent inwards at a right angle, in consequence of an injury; in another there was an exostosis of the left tuberosity of the ischium. In the six remaining cases where low forceps was used and where the extraction was easy, the reasons for operating were that the labors were not progressing and the patients were showing signs of exhaustion. In several of these cases, perhaps in all, natural delivery would probably have occurred in time. And the question of the propriety of operating depends upon balancing the grave dangers of exhaustion and the slight dangers of the operation. As a matter of fact there was a slight post-partum hæmorrhage in one of these six cases, and a slight laceration of the perineum in three others; while in 143 normal cases there were only 26, or 18¼ per cent., in which laceration occurred, and post-partum hæmorrhage occurred in 15, or in 10 per cent.

Of the four mothers who died, as is shown in the following reports, not one died from the effects of operation. But of the twelve stillborn children, two deaths were due to craniotomy, performed after the accidental crushing of the skull in attempts to deliver with forceps; in two more cases death was undoubtedly due to the instruments; in three cases the fœtus

[1] Boston Medical and Surgical Journal, May 2, 1889.

TABLE OF EIGHT PODALIC VERSIONS.

No.	Para.	Pos. and Pres.	Reasons for Operating.	Character of Operation.	Anæsthetic	Weight and Condition.	Damages.
1	V	O. R. A.	Patient exhausted after nine hours of 2d stage labor.	Clumsy. Much trouble in bringing down arms.	Ether.	Seven pounds. Easily resuscitated.	None.
2	VIII	O. R. P.	Narrowed conjugate. No progress. Called in to operate.	Extremely difficult.	Ether.	Ten pounds. With difficulty resuscitated. Partially paralyzed. Died in one year.	None.
3	III	O. R. A.	Prolapsed cord. Called in to operate. "Forceps had been tried for hours."	Difficult, because of contracted uterus.	Ether.	Thirteen and one-half pounds. No heart-beat, though good color, under artificial respiration for one hour.	Moderate laceration of perineum.
4	VI	Head.	Placenta-prævia. Considerable hæmorrhage.	After manual dilatation, easy.	Ether.	Six pounds.	None.
5	II	Head.	Placenta-prævia centralis. Called in to operate.	Difficulty in delivering head.	Ether.	Hydrocephalic. Spina-bifida. Still-born.	Perineum lacerated half-way. Died from hæmorrhage.
6	IV	O. R. P.	Contracted pelvis. No pulsation in cord.	Very difficult.	Ether.	Ten pounds. Still-born.	Laceration of the perineum.
7	I	Head.	Phthisical patient. Was exhausted.	Easy.	Ether.	Five pounds.	Post-partum hæmorrhage.
8	II	Head.	Eclampsia. Called in to operate.	Manual dilatation.	Ether.	Six months' fœtus, dead.	Died sixth day.

had been dead for some time previous to the labor; three more are reported in the table of Versions; and the remaining two were in cases of breech presentation where there was no pulsation in the cord at the time of its delivery.

Of the four babies who died within ten days of birth, one was a hæmophilia, one died from marasmus, and two died from the effects of instrumental delivery.

So far as the cases of this series are concerned the advantages and disadvantages of employing high forceps or podalic version are shown only in the reports of the infant mortality.

Before we had axis traction instruments, and before I found out that it is perfectly practicable in applying high forceps to rotate the head into the most favorable position, and to hold it there while applying the instruments, I believed that the employment of version offered a better chance of life to the fœtus. I knew that the mother's perineum was more endangered. I now believe that there is an advantage on the side of high forceps as regards both mother and child.

CASE I. Pulmonary embolism; death.

Mrs. E. F., primipara, twenty-four years old, a strong, vigorous woman, was taken in labor at midnight February 3, 1889. The first stage ended at 9 P. M. the next day. After two hours, the pains slackened. There was no engagement of the breech, which was in left anterior position. Ineffectual attempts were made with fingers hooked in groin to draw down the breech.

At 12 A. M., February 4th, with Dr. H. A. Wood's assistance the patient was etherized. As soon as she became fully anæsthetized, while in operative position, she vomited a thin, darkish fluid, and immediately became cyanosed. She was at once turned upon her side, her tongue held forward, and every effort made to assist the violent coughing that ensued. I supposed that she had inspired some of the vomitus; but I now believe that a pulmonary embolism occurred at the time of vomiting.

After an hour's interval she was again etherized. With Dr. E. R. Cutler's assistance, and by means of the blunt hook, the left, and finally the right leg, was delivered. The pelvis was evidently abnormally small, and only by tremendous traction was the child, a boy of eight pounds, delivered. There was no heart beat. The mother's perineum was torn to the sphincter ani. She was still cyanosed. Her pulse was 140. As she came out of the ether the dyspnœa increased. Heart sounds obscured by the sonorous explosive râles. Digitalis and carbonate of ammonia were given subcutaneously. She rallied somewhat, and for several hours was able to talk, but was still cyanotic. Died at noon.

CASE II. Septicæmia; death.

On February 28, 1890, Mrs. T. R., a primipara, twenty-three years old, had been in labor sixty hours. I hastened the delivery of an eight-pound girl by completing the dilatation of the os, and by rotating the occiput from the right posterior position to the front. All went well till the morning of the fifth day, when she had a chill, and became delirious. Her old nurse had let the bed become filthy. After cleaning her surroundings, I douched and thoroughly curetted the inside of the uterus, and inserted an iodoform pencil. There was no improvement. General peritonitis followed, and she died on the seventeenth day.

I ought to have made an abdominal section, and cleared out the infected area. The case was complicated by a mitral insufficiency, and by general family rows, owing to the discovery that her marriage was only a pretence.

CASE III. Placenta-prævia centralis; death.

Mrs. F. G., secundipara, eight months' pregnant, had been flowing freely for twelve hours, when I was called in consultation, February 14, 1890. Her strength was good, her pulse fairly full. She was having occasional pains. The os was half dilated, and the placenta firmly attached all round. Under full anæsthesia I dilated the os manually, bored through the placenta, and did podalic version. With considerable difficulty I delivered her of a dead fœtus (spina

bifida and hydrocephalus). Neither during nor after delivery was there excessive hæmorrhage. The placenta came away easily. The ruptured perineum was repaired. But in spite of intrauterine douches of hot water and of vinegar, of ergot given by the mouth and subcutaneously, the uterus did not contract well, and some flowing continued till her death five hours after delivery.

Case IV. Adherent placenta; post-partum hæmorrhage; septicæmia; recovery.

Mrs. W. J., a secundipara, thirty-four years old, after passing easily the second stage of labor, began flowing frightfully. On attempting to extract the placenta I found it firmly adherent in the left lower segment of the uterus. I dug it out as best I could, curetting vigorously and using hot douches of 1 to 8000 bichloride solution. She became pulseless, but rallied well. On the third day she had a chill, and, for six days afterwards, evident septicæmia. Intrauterine douches of bichloride solution (1 to 8000) were given for three days. A sharp diarrhœa followed; and then rapid convalescence.

Case V. Eclampsia; induced labor; death.

I was called in consultation January 6, 1891, to see Mrs. S., a strong woman of forty-eight years, who was then comatose. She had been pregnant once, nine years before, but had miscarried at three months. She last menstruated June 11, 1890. Five months afterwards she felt fœtal motion. Beyond feeling more tired than usual and being very constipated, she had been well till within the last few weeks. She had, during this time, suffered from headache for the first time in her life.

The day before she was as well as usual till night, when she was seized with "cramp colic." At 3 A. M. January 6th, six hours before my first visit, she had had a convulsion.

Her urine, drawn by catheter, solidified on boiling. I immediately dilated the os uteri, first with a uterine sound, then with Ellinger dilators, and lastly with my fingers — one of which did not recover from numbness for two months. By podalic version the dead fœtus was delivered,

The patient rallied well, becoming fully conscious the next day. But her urine grew scantier, and she died on the fifth day.

Case VI. Contracted pelvis.

On February 1, 1889, I was called in consultation to deliver Mrs. C., a stout woman, twenty-six years old. This was her third pregnancy. The first resulted in a craniotomy; the second in a still-birth by podalic version. She had been in the second stage of labor for many hours, and forceps had been several times tried. I found the head presenting in right posterior position, not engaged. After rotating the occiput to the front I applied forceps and the Reynolds traction-rods. The extraction was difficult. The boy baby weighed eight pounds. There was no heart beat, and all efforts to resuscitate failed. The mother made a good recovery, and the next year applied to me to take charge of her in her fourth confinement.

I made these measurements: Distance between the anterior superior spinous processes, 7 in.; between the iliac crests, 9½ in.; between the tuberosities of the ischiums, 3½ in.; the external conjugate, 7 in.; the diagonal conjugate, 4½ in.

She was taken in labor August 8, 1890. After twelve hours, the os being nearly dilated and the pains amounting to nothing, I completed the dilatation, rotated the occiput from the right posterior to front position, applied forceps and traction-rods. On vigorous pulling I broke the left frontal bone, just above the zygomatic arch. I then performed craniotomy, and with difficulty delivered a female child which, minus brains and blood, weighed eight pounds. There was a severe post-partum hæmorrhage, finally controlled by hot intrauterine douches of one per cent. acetic acid. The patient made a good recovery and is again pregnant.

Case VII. Contracted pelvis.

Distance between anterior superior spines, 8½ in.; between crests of ilium, 9 in.; between trochanters, 11 in.; external conjugate, 6 in.

On February 15, 1889, I was called in consultation to deliver Mrs. W., a small, sickly primipara, twenty-five years old. She had been in labor two weeks. The membranes had protruded and broken, and were putrid. She had had hard pains for two days previous, but was having none at the time of my visit. She was not able to retain any nourishment.

I found the os uteri nearly dilated, the head presenting in left anterior position. There was a very prominent caput succedaneum, but the head was not engaged. The uterus was firmly contracted. Forceps was applied with difficulty on account of the tightness of the vagina. With axis traction-rods, after an hour of hard pulling, I delivered a nine-pound boy, who lived only four hours.

The head, during its passage through the pelvis, became jammed into the right side. The forceps was not well applied, for one blade tore the scalp over the right frontal bone. The perineum was lacerated to the sphincter ani, and there was considerable post-partum hæmorrhage.

Her convalescence was uninterrupted.

Case VIII. Contracted pelvis.

Distance between anterior superior spines, 7½ in.; between crests of ilium, 9 in; between trochanters, 10½ in.; external conjugate, 6½ in.

Mrs. O. S., primipara, twenty-one years old. First pains, July 23, 1889, all day. Then comfortable till July 30th, when she had pains for a few hours; no sleep that night. July 31st, pains very infrequent; slept well. August 1st, 2 P. M., pains began hard, and waters came; no further dilatation at 9 P. M. Chloral given with no effect, except to ease her. Cervix lips wire-edged; excruciating suffering; but no dilatation. At 9 P. M., full anæsthesia and manual dilatation. O. R. P. At 1 A. M., pains not engaging head, I put on forceps and traction-rods, under mistaken impression that I had rotated occiput to front. Very hard extraction — of face under arch. Difficult resuscitation. Boy, seven pounds. Perineum lacerated half way to the sphincter ani. Convalescence normal.

Case IX. Contracted pelvis.

Distance between anterior superior spines, 10 in.; between crests of ilium, 11 in.; between trochanters, 13 in.; external conjugate, 8 in.

Mrs. P. C., quadripara. Labor began at 8 P. M., May 17, 1890. At midnight I found os dilated. For two hours pains hard, but no engagement. I ruptured membranes, but no gain. With Dr. H. A. Wood's help etherized, and tried manually to rotate O. R. P. to anterior position. This failing, and finding no pulsation in cord, I did podalic version. But after deliv-

ering body and arms, I was obliged to have Dr. Wood deliver head. Boy, ten pounds, still-born. Laceration of the already poor perineum. Convalescence normal.

CASE X. Contracted pelvis.

Distance between anterior superior spines, 7½ in.; between crests of ilium, 10½ in.; between trochanters, 12½ in.; external conjugate, 6¼ in.

Mrs. L. R., primipara, twenty-five years old. I was called to operate at 5 P. M., December 27, 1890. She had been in labor twenty-four hours, but was then having only worthless pains. Under anæsthesia I completed the dilatation of the os uteri, rotated the occiput from the left posterior position to the front, and applied forceps and the axis traction-rods. After tremendous pulling I delivered an eight-pound boy, who died on the day following from effects of the instruments, I doubt not. One eye-lid was torn. The mother did well.

LAPAROTOMY, VERIFYING THE DIAGNOSIS OF PELVIC CELLULITIS.[1]

BY CHARLES P. STRONG, M.D.

So thoroughly is the idea now established among the profession that collections of pus in the pelvic cavity are the result of inflammatory action set up by tubal disease, that the condition formerly called, and treated as, cellulitis, or inflammation of the cellular tissue, in various parts of the pelvis, is practically disregarded. In consequence, instead of aspiration followed by drainage, the tendency is to treat all cases by laparotomy, with the idea of removing the offending tubes.

The following case in which the diagnosis was verified by subsequent laparotomy, is, in this connection, one of very great value.

Miss K., had been a sufferer all her menstrual life with pain at the menstrual period, and inability to walk or stand at that time. She had been bed-ridden for several months at a time with attacks of pelvic inflammation.

In the summer of 1890, one of these attacks left behind it a collection of pus, which was evacuated through the vagina. At that time it was considered that, although this abscess was opened, drained and healed, still there was left behind the cause of the purulent collection, namely, salpingitis.

I first saw the patient in December, 1890, at which time she was just recovering from a severe attack of gastritis. With her menstrual history, and the fact that she was obliged to support herself; having in view the fact that she had had these repeated attacks of inflammation; having in view, also, the fact that the exhaustion consequent upon the suffering during each menstrual period was so extreme that she could not rally her strength before the catamenia again appeared, — with the full consent, or rather, at the urgent request of the patient, I performed laparotomy in December, removing the tubes and ovaries of each side.

I found both ovaries and tubes, in gross appearance, healthy. There was no indication of any salpingitis, either pre-existent or then existent; nor could anywhere in the pelvis be detected the signs of any of the previous attacks of so-called pelvic peritonitis, except the existence of a few fine bands of adhesion holding down the ovaries, which were displaced posterior to the uterus in Douglas's fossa.

The only evidence of the disease of last summer was to be found in a slight thickening of the cellular tissue between the peritoneum, which dipped down into the retro-uterine space, and the posterior cul-de-sac of the vagina. This thickening was entirely subperitoneal.

It would seem, therefore, beyond all question, that the abscess which last summer was opened, drained and healed, and, very probably, these attacks, or many of them at least, which had been called pelvic peritonitis, had their origin, not in the pelvic peritoneum, but in the cellular tissue investing that membrane; that is, this had been a case of true pelvic cellulitis.

While entirely in accord with the majority of the profession, who do thus thoroughly believe in the tubular origin of pelvic inflammation, I yet feel that the evidences of this case demand a suspension of our judgment in too hastily condemning those who are inclined to adopt, in many cases, the more conservative measures of opening an abscess that can be easily reached through the vagina, and draining through that canal, unless strong evidences have been presented of previous tubal disease.

Furthermore, in this case, there was doubly a reason to anticipate tubal disease, from the fact that the patient had for many years been the subject of endometritic and endocervical inflammation.

NOTE. — June 1, 1891. Since the operation, six months ago, the patient has not menstruated; has gained very much in general health and freedom from pelvic disturbance of pain and discomfort. Her only complaint now is leucorrhœa from endometritis, for which I have advised curetting.

[1] Read before the Obstetrical Society of Boston, April 1, 1891.

Medical Progress.

RECENT PROGRESS IN MEDICAL CHEMISTRY.

BY WILLIAM B. HILLS, M.D.

TOXIC ACTION OF URANIUM SALTS.

WOROSCHILSKY'S [1] experiments confirm the statement, first made by Lecoute, in 1851, and more recently by Chittenden, that glycosuria is a constant and characteristic symptom in poisoning by the salts of uranium. As a result of eight experiments with the nitrate, he agrees with the conclusion of Lecoute and Chittenden that it is intensely poisonous. But neither the nitrate or the acetate is well suited for physiological investigations, as both salts coagulate albumen, even when diluted in the proportion of 1 : 10000. Further experiments were, therefore, instituted with the double tartrate of uranium and sodium, which is readily soluble, and does not precipitate albumen.

The physiological action of this salt, exhibited in various ways, was studied in the case of worms, frogs, birds, and mammals. It was found that whether absorbed through the mucous membrane of the stomach, or introduced by subcutaneous injection, it is powerfully poisonous. Subcutaneous doses of 0.5–2.0 milligrammes per kilogramme of body weight cause death with all the symptoms of acute poisoning. It is noteworthy that very small doses administered subcutaneously are almost as quickly fatal as are considerably larger quantities, the only difference being that the action of the latter on the organs affected is more marked. It is remarkable that during the first day or

[1] American Journal of Pharmacy, January, 1891, p. 22.

two after the administration of the poison there is no outward evidence of its effects save the pathological character of the urine, although afterwards the toxic action is increasingly manifest.

The symptoms produced by poisonous doses of uranium salts are as follows: severe gastro-enteritis follows its administration, while nephritis is induced by such small doses as one to two milligrammes per kilogramme of body weight. It is distinguished from other metallic poisons by acting directly, even in small doses, on the walls of the blood-vessels. This tendency is doubtless closely connected with its specific action on the blood, by causing the hæmoglobin to retain oxygen altogether abnormally, in which respect it resembles hydrocyanic acid.

When the uranium salt is introduced into the circulation, the oxyhæmoglobin, which is, from the action just mentioned, reducible only with difficulty, probably affects the walls of the blood-vessels in the same manner as venous blood, and causes their dilatation. The failure of the oxyhæmoglobin, under the influence of the uranium salts, to part normally with its oxygen accounts also for the profound disorganization of the nutritive functions which ensues, and for the derangement of the nervous system, liver and kidneys, which accompanies it. It also explains the general waste of tissue, resulting in the emaciation of the animal under experiment, which was a characteristic symptom, and further affords an explanation of the appearance of sugar in the urine; which is merely a sign of imperfect oxidation in the circulatory system, disappearing with the removal of the ultimate cause.

POISONING BY BARIUM CHLORIDE.

Acute poisoning by the salts of barium is of rare occurrence. The following case, reported by MM. Ogier and Socquet,[2] is therefore of special interest. About twenty grammes of the salt were taken by mistake for magnesium sulphate. Almost immediately violent vomiting ensued, followed soon after by diarrhœa. The vomitus was at first greenish in color, later bloody. Death occurred in five hours.

At the autopsy the following conditions were found: there was slight congestion of the lungs. The mucous membrane of the stomach was very much swollen, and red in places owing to ecchymoses. The kidneys were congested. The cavities of the heart contained a small amount of blood, a part coagulated, a part fluid, somewhat viscid, and dark in color. The intestines contained a small quantity of fluid contents; the mucous membrane was normal. The brain and meninges did not present the "congested" character which has been noted in certain cases of poisoning by the salts of barium.

The authors made a separate determination, with the various organs, of the unchanged barium chloride, and the barium chloride which had been changed to sulphate by the action of the sulphates in the system. No barium chloride was found in the contents of the stomach or intestines. The liver contained 0.126 gramme of hydrated barium chloride; kidneys, 0.050 gr.; lungs, 0.070 gr.; 15 grammes of blood taken from the heart, 0.003 gr.; spleen, a trace too small to estimate; brain, none.

The distribution of the barium sulphate was as follows: contents of the stomach, a trace; contents of intestines, 0.019 gr.; liver, 0.088 gr.; kidneys, 0.028 gr.; spleen, 0.003 gr.; lungs, 0.021 gr.; blood from heart, 0.003 gr.; brain, none. There was thus an entire absence of unchanged barium chloride in the contents of the stomach and intestines; these containing barium sulphate only, and of that a mere trace. The blood and various organs of the body contained both chloride and sulphate.

The great disproportion which exists between the quantity taken and the quantity isolated from the organs is noticeable. While twenty grammes were taken, less than one-half gramme was recovered. The explanation is to be found in the prompt removal of the poison by vomiting. The salts of barium apparently resemble in this respect, the salts of certain other metals, for example, copper. There is no relationship between the quantity ingested, and the quantity fixed in the tissues. Apparently, nearly as much may be absorbed from the administration of small non-poisonous doses as from the ingestion of a large quantity. The recovery, therefore, of a small quantity from the organs, does not justify the conclusion that the quantity taken was small and incapable of causing death.

The authors call attention to the fact that, although the isolation and identification of the salts of barium present no difficulties, their presence may be very easily overlooked, unless attention has been directed to them by the history of the case.

The authors, as a result of numerous investigations, reject the hypothesis which has been suggested, namely, that the salts of barium determine death as a result of their conversion into sulphate thus forming a mechanical obstacle to the circulation.

STRONTIUM SALTS.

In a paper read before the *Société de Biologie*, Professor Laborde[3] stated that the salts of strontium are harmless, even when given for relatively long periods of time. They produce diuretic effects, however, and these have been substantiated, clinically, by Professor Sée, who used the lactate and the tartrate of strontium. They thus differ from barium salts, which are very toxic. Dr. Laborde thought that the strontium salts exercised a preservative action upon organic tissues, liquids and excretions.

MERCURY.

Observations made by Marco T. Lecco[4] during the examination of a human stomach containing mercury, show that this metal is not readily soluble in hydrochloric acid on the addition of potassium chlorate; and that, therefore, in the destruction of organic substances containing mercury, by means of these reagents, the entire quantity of mercury present passes into solution only with difficulty. In the stomach in question minute metallic globules could be distinctly seen, which, when separated, were recognized with certainty as mercury.

In order to test the stomach for other mineral poisons and to determine the mercury, it was exposed to the action of hydrochloric acid and potassium chlorate. After the destruction of the organic matter, the product of the reaction was worked up in the ordinary manner. But on examining the solution it was scarcely possible to find the slightest trace of mercury. In consequence, the undissolved residue was examined

[2] Annales D' Hygiène Publique et de Médecine Légale, May, 1891, p. 447.

[3] American Journal of Pharmacy, March, 1891, p. 129.

[4] Chemical News, May 29, 1891, p. 254, from Berichte der Deutsch. Chem. Gesellsch., xxvi, No. 6, p. 928.

more closely, and found to still contain mercury. Further experiments were conducted with pure mercury, in which the action of concentrated and dilute acid, at common temperatures, with prolonged action and on the water bath was tested, and in all cases the result was that mercury is with difficulty soluble in the reagents named. It is, therefore, absolutely necessary in the destruction of organic matter by this process to keep this property of mercury in mind, and to prolong the action of the acid and the chlorate for some hours, with the application of heat and with frequent stirring.

DETECTION OF COLCHICINE.

N. Obolonski[5] recommends the following process: The finely divided viscera are rubbed up with glass powder, treated with oxalic acid, and digested for twelve hours with alcohol. The liquid is squeezed out, and the dry residue twice washed with alcohol. The extract is concentrated at a temperature not exceeding 80°, and the cooled residue made up to the original volume with alcohol. The filtered liquid is evaporated as before, and this operation repeated until no clots separate on the addition of alcohol. The residue is then dissolved in water, the solution purified by shaking with light petroleum, and the colchicine finally extracted with chloroform as usual.

The alkaloid is best identified by means of the violet color produced by nitric acid; by Erdmann's reagent (nitro-sulphuric acid), which gives in succession green, dark-blue, violet and yellow colors, turning to raspberry red on adding alkali; also by Mandelin's reagent (one gramme of ammonium vanadate in 200 grammes of sulphuric acid), which gives a green color. Colchicine is with difficulty destroyed by putrefaction of animal matter. The kidneys, bladder and urine are best suited for forensic examination.

SUGAR.

Hunkiarbeyendrian[6] adds salol to the list of substances which impart to urine the property of reducing the oxides of copper, silver and bismuth in alkaline solution. The urine of persons to whom salol has been administered, furnishes, when tested with Fehling's solution, a precipitate of the red oxide of copper, the quantity varying with the amount of salol absorbed. If such urines contain at the same time sugar, the polariscopic test is also subject to error, since urines containing derivatives of salol polarize to the left; the results obtained are therefore too low.

To distinguish, in urine, sugar from the derivatives of salol, the following process is recommended: A tube of the capacity of fifteen cubic centimetres, is half filled with urine previously treated with basic acetate of lead. To this is added five centigrammes of hydrochlorate of phenyl-hydrazin and twenty centigrammes of sodium acetate. The liquid, which assumes a yellow color, is heated in the water-bath to 100° for half an hour, and then allowed to cool, when the precipitate formed is examined microscopically. If due to derivatives of salol, the precipitate is amorphous; if to sugar, it is composed of small, silky crystals of phenylglucosazone, which are at times grouped into tufts.

A more rapid process, which does not require the employment of the microscope, is the following: To 200 cubic centimetres of urine, there is added one gramme of sulphuric acid and about 50 cubic centimetres of ether free from alcohol. The mixture is shaken for several minutes, then allowed to stand awhile. The upper layer, which contains the derivatives of salol, is evaporated in a porcelain capsule, the residue thus obtained dissolved in a little water, and the solution tested with a few drops of a solution of the perchloride or persulphate of iron. A violet coloration is produced in the presence of derivatives of salol. The lower layer of liquid is treated with basic acetate of lead, and, after filtration, tested for sugar by the ordinary methods. Non-saccharine urines containing derivatives of salol, when treated in this manner, have no action on metallic oxides, or on the rays of polarized light.

Jolles[7] considers that a sharp distinction exists between glycotic and diabetic urines. The former contain but mere traces of sugar, about 0.4–0.5 per cent., and otherwise are not characterized by abnormal chemical and physical properties. The diabetic urines, on the other hand, have a high density, a pale-yellow color, a less quantity of uric acid than normal urine, and contain acetone, or aceto-acetic acid, or acetic acid. Sugar usually occurs in them in considerable quantities, although this is not always the case. A new method, namely, to paint a visiting card first with copper sulphate solution, and, after drying, to apply the suspected urine with a match, dry and heat, which has recently been proposed by v. Becker, is considered wholly untrustworthy by the author. Trommer's method, and Seegen's modification of the same, are also considered valueless by the author. Böttger's bismuth reagent and the phenyl.hydrazine test are found by him to be trustworthy. With Böttger's bismuth reagent, 0.08 per cent. of sugar may be detected, and if the urine be first boiled with a solution of sodium chloride the delicacy is heightened, 0.01 per cent. being then detectable. At least fifty cubic centimetres of urine must be employed to five cubic centimetres of Nylander's reagent, and should not be boiled for more than two minutes. The presence of such substances as rhubarb, kairine, oil of turpentine, quinine, arsenious and salicylic acids, sulphur, mercury salts and iodides, should be avoided. In the case of considerable quantities of uric acid, it is to be observed that the brown coloration produced by it remains constant, whereas that produced by the presence of sugar becomes continually darker. The phenyl-hydrazine test enables 0.015–0.038 per cent. of sugar to be detected, the delicacy being the greater, the less the amount of reducible substances present. At the same time crystals, very similar to those of phenyl-glucosazone, are formed with glycuronic acid. The latter are, however, not so fine, and have not the same striated arrangement as those of phenyl-glucosazone.

Hirschl[8] considers the phenyl-hydrazine test a perfectly trustworthy one. If the urine gives typical needles of phenyl-glucosazone, it certainly contains glucose. It is essential, however, that the test-tube should be allowed to remain one hour in the water-bath. If this is done, the precipitate caused by glycuronic acid, if this substance is present, is wholly amorphous, and easily distinguishable from phenyl-glucosazone. Levulose cannot be distinguished from dextrose by this test, but only by the polarimeter. Lactose, which has been found in the urine of nursing women,

[5] Journal of the Chemical Society, London, Jan., 1891, p. 135.
[6] Journal de Pharmacie et de Chimie, Nov., 1890, p. 424.
[7] Journal of the Chemical Society, London, March, 1891, p. 369.
[8] Journal of the Chemical Society, London, July, 1890, p. 836.

furnishes needle-shaped crystals, which are about ten times the width of those of phenyl-glucosazone, and do not show the same orderly arrangement. Their melting point is 200°. Maltose gives a precipitate, which occurs in yellow tables, melting at 82°.

HÆMATOPORPHYRIN IN URINE.

Salkowski[9] describes three cases of women who passed this pigment in their urine. Six cases of this kind have been observed. In the present cases, Salkowski thinks that the presence of the pigment is to be attributed, in all probability, to the fact that the patients were taking sulphonal.

V. Harley and S. Torup[10] report two cases of women who suffered from severe nervous symptoms, ending in death. They were treated with sulphonal and chloral, and passed urine of a port wine color. The urine contained no albumen, sugar, bile, or blood. The pigment in these cases was, in all probability, hæmato-porphyrin.

EXCRETION OF BALSAMS IN THE URINE.

In a research carried out by R. Stockman[11] on human beings and rabbits with the four balsams of the British pharmacopœia (balsam of Peru, balsam of Tolu, prepared storax, and benzoin), it was found that balsam of Peru caused no disturbance of the kidneys, but the urine, if the dose given is large, gives a precipitate with nitric acid, as if albumen was present. The precipitate is, however, soluble in alcohol and in excess of acid. Prepared storax causes a similar condition. Treatment with benzoin gave no positive results, as, owing to the difficulty of dissolving it in suitable menstrua, it was impossible to give large doses. The same may be said for balsam of Tolu. In all cases the urine contained a large excess of hippuric acid. This research is of interest, as nephritis is said to have been set up in certain cases as a result of the use of these drugs.

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Meeting, April 11, 1891.

Dr. A. Worcester reported, by invitation,

A SECOND SERIES OF TWO HUNDRED CONSECUTIVE CASES OF MIDWIFERY.[1]

Dr. Sinclair spoke of the value of the curette in cases where there were symptoms resulting from retained portions of the placenta or membranes. The first case in which he had used it was some six or eight years ago shortly after its use was recommended abroad, and before it had come into use for this purpose here in Boston. In this case he removed quite a large amount of débris whose decomposition was causing septicæmia, washed out the uterus with a corrosive sublimate solution and introduced iodoform with subsequent good results. Since then he has used this treatment in a number of cases following abortion.

Dr. Green was much interested in the carefully prepared report to which the Society had listened, and which suggested several topics for profitable discussion. His attention was attracted to the number of cases of post-partum hæmorrhage: it seemed to him that twenty-one cases of hæmorrhage out of a total of two hundred labors, that is to say one hæmorrhage in every ten cases, was a larger proportion than ought to occur, if the third stage of labor was properly conducted. He believed that the reader had reported the average length of the third stage in his two hundred cases to be about ten minutes, and herein he thought would be found the explanation of the frequent occurrence of post-partum hæmorrhage. There was a time, some ten years ago, when it was taught that the placenta should be expressed as soon as possible after the birth of the child; but he believed that a more rational understanding of the causes of post-partum bleeding had led the best teachers of the day to place no definite time limit within which the placenta should be removed, as this act should depend more on the condition of the uterus than on the lapse of so much time.

It is now well understood that post-partum hæmorrhage is most effectively prevented by securing the closure of the retro-placental uterine sinuses: while this closure may be, and sometimes is, accomplished by thrombosis, the more safe and physiological closure is secured by the retraction or rearrangement of the uterine muscular fibres, — a process which begins with the first contractions of the uterus and continues throughout the labor. We are truly told that hæmorrhage is likely to follow the rapid emptying of the parturient uterus, whether by nature or by art; and the reason why lies in the fact that in these rapid labors, there is not sufficient time for the normal retractive process to effectually take place. If, therefore, after the birth of the child, the placenta is hastily expressed, before a sufficient number of uterine contractions have brought about an effective muscular retraction, the sinuses will not be well closed and more or less hæmorrhage must necessarily take place. Much might be said in regard to the prophylaxis of post-partum bleeding; but he would restrict his remarks solely to the management of the third stage.

During the expulsion of the child the uterus should be supported and followed down by the nurse, and held or "cupped" by her while the medical attendant separates the funis and gives the necessary attention to the child. The physician should then take charge of the uterus, and by means of gentle massage reawaken muscular activity. The uterine contractions may soon begin again; but if the labor has been long and tedious, there may be quite an interval of uterine inertia. During this period of uterine inactivity no effort should be made to remove the placenta, unless hæmorrhage should supervene, and this is not likely to occur if the placenta is undisturbed. Even after the uterus has resumed its functional activity, no immediate effort at expression of the placenta should be made, but the attendant should wait four or five contractions and give the uterus an opportunity to extrude the placenta *sua sponte*. If, after five or six good contractions, the placenta is still retained, it is then time to make use of Credé's method of expression, or, if this method fails, of manual extraction. When the

[1] See page 28 of the Journal.

[9] Chemisches Centralblatt, 1891, 1, p. 678. Abstract.
[10] Journal of the Chemical Society, London, May, 1891, p. 601, from British Medical Journal.
[11] Journal of the Chemical Society, London, May, 1891, p. 600, from Laboratory Reports, College of Physicians, Edinburgh, 3, 65-69.

third stage is conducted in this manner, the speaker believes that post-partum hæmorrhage is of rare occurrence.

DR. MINOT was surprised at the large number of cases of deformed pelvis. Among Americans he had found contracted pelves of very rare occurrence and also as far as his experience went this was the case among the Irish. He believed, however, that among the English and Continental nations deformed pelves were comparatively much less rare.

DR. WORCESTER replied that every one of the cases of deformed pelvis occurred among the foreigners who constitute in Waltham a large class among the operatives at the watch and cotton factories. They were Swiss, German and English, and in two cases Irish. He had never yet met with an American with contracted pelvis.

DR. J. STEDMAN agreed with Dr. Green that the too rapid completion of the third stage was a not infrequent cause for post-partum hæmorrhage, as he had found in cases where he had been called in by other physicians for this emergency. He himself always waited for nature, more particularly after etherization.

DR. SINCLAIR said that in the early days of his practice he had allowed plenty of time for the third stage. Later, however, he had adopted Credé's method of rapid delivery of the placenta, but did not doubt but that it was the cause of post-partum hæmorrhage in some cases. He had, therefore, within a few years returned to his earlier practice.

DR. TOWNSEND agreed with Dr. Green in the importance of not hurrying too much the third stage, although formerly when he had made a point of completing the third stage in five or ten minutes by Credé's method he had not been troubled by post-partum hæmorrhages. He was surprised at the large number of these cases reported by the reader. In the out-patient service of the Lying-in Hospital and Dispensary the externes, being often unable to perform the Credé expression properly, the third stage in many of the cases is practically left to nature. Out of the seven hundred or more cases delivered every year in this service very few cases of true post-partum hæmorrhage are met with.

DR. WORCESTER in closing, said: As regards the use of the curette after abortions it was often impossible to push the uterus down far enough to clean it out with the finger without the use of ether, whereas curetting is a very easy and painless process and withal an effectual one.

Of the two cases of septicæmia in his two hundred cases, the one fatal, the other not, he would say that in the former case the temperature remained normal till the fifth day, and he believed that septic infection did not occur during labor, but in the early days of the puerperium which was not under his control. The latter case occurred in a patient with miserable surroundings where he was obliged to work with every disadvantage. The septicæmia was slight and of short duration.

His list of lacerated perinei was large owing to the fact that he included slight nicks in this class; and he had called any undue hæmorrhage a post-partum hæmorrhage, although he did not doubt but that many of these would not be so considered by other physicians.

In the absence of Dr. Strong a paper by him was read by the Secretary, entitled

LAPAROTOMY, VERIFYING THE DIAGNOSIS OF PELVIC CELLULITIS.[2]

DR. SINCLAIR said that the name of Pelvic Cellulitis was given by Simpson. The criticism was easily made that it seemed impossible for the cellular tissue to swell to such a degree as to form such large masses, but the most severe blow to this explanation of the pathology was given by Bernutz and Goupil, who found that inflammed tubes and ovaries occurred in most of the cases.

That true cellulitis does occur in some cases is shown very beautifully by the case reported. Before the use of antiseptics cases used to occur during the puerperium. The number of cases of true pelvic cellulitis is, however, rare compared with the number of cases of pelvic peritonitis due to salpingitis.

MASSACHUSETTS MEDICAL SOCIETY. THE ONE HUNDRED AND TENTH ANNUAL MEETING.

BOSTON, JUNE 9 AND 10, 1891.

(Continued from No. 1, page 16.)

SECTION IN SURGERY.

THE Section met in Cotillon Hall, Dr. J. C. WARREN in the chair. The subject for consideration was

THE DIAGNOSIS AND TREATMENT OF INFLAMMATIONS OF THE APPENDIX.

In opening the discussion, the Chairman said: When asked to preside over this Section it occurred to me that I could not select a better topic for discussion than the diagnosis of inflammation of the appendix. The subject has received an unusual amount of attention during the last few years, but has not as yet been discussed by this Society, and it seemed to me that its great importance, as a frequent and dangerous disease, made it desirable that the members of the Society should have an opportunity of coming to an understanding among themselves as to the proper mode of dealing with it. By way of introduction, I will cite two cases, which serve admirably well to show the difficulty of determining the moment when surgical interference should take place, and the treacherous nature of the disease.

I was called to the first case a few days ago. A boy ten years of age, had entered the hospital after an illness of about a week, characterized at the outset by a sudden attack of pain in the right iliac region, associated with nausea and vomiting, which had continued with more or less regularity until his entrance, at which time, there was some tympanites, "with tenderness everywhere, but most marked in the right iliac region, where there was an area of dulness, indefinite and small." (Record of Dr. W. L. Richardson.) Pain was constant, and he required morphia. At no time was there any great rise of temperature, and the boy's general condition seemed excellent after entrance. A great increase of pain, with rise of pulse and temperature, and a development of great abdominal distention occurred on the fourth day after entrance. On examining him I could find no dulness in the region of the appendix, or tumor in the rectum, which was well defined. An incision near the anterior superior spine

[2] See page 32 of the Journal.

of the ilium exposed the peritoneum, on opening which I found a large collection of foul pus, several ounces of which escaped. The pus cavity extended some distance between the coils of intestine; the appendix was found with its sloughing tip, and was excised. Dr. John Homans will tell you more about the subsequent history of the case. At last accounts the boy was doing well. This case illustrates one of the dangers of the disease, the supervention of a general peritonitis from breaking of the abscess into the peritoneal cavity.

The other case was reported by Dr. A. L. Mason, and illustrates the absence of severe constitutional disturbance, in a case that terminated fatally.

E. J. B., a printer, aged thirty-four, entered the City Hospital in the medical department, January 13, 1891. He said that he had had previous attacks of colic which were relieved by cathartics, and his trade led us to make a careful examination for lead which was negative in result. January 11th, he ate two cakes of Baker's chocolate, to which he attributed his present illness.

January 12th. Dull pain in left iliac fossa, and at night all over abdomen, with chills, nausea and vomiting.

January 13th. Entered the hospital, stating that he had taken an enema before admission, but had passed no wind for two days. The pain was dull over whole abdomen, which was moderately tense. No tumor. Urine high color, acid, 1027; large trace of albumen, excess of uric acid; much granular débris, and a few hyaline and granular casts.

January 14th. Three loose movements in the night. Pain was relieved by morphia. Much more comfortable. Abdomen still tense, but much less tenderness. Palpation negative. Rectal examination not painful, and no tumor could be felt. Occasional hiccough.

January 15th. Tenderness seemed to be more localized on the left, but no hardness could be felt, and nothing by the rectum to indicate abscess.

January 16th. Fifth day. Temperature became normal; pulse 88. He was able to assume any position in bed, and had slight general tenderness in lower abdomen, not localized. No induration was found. The bowels moved three times. No vomiting since entrance. Hiccough occurred at times. The same conditions continued until the sixth and seventh days, and on the eighth day two small loose evacuations were noted. Normal temperature and little pain. In the evening a sudden increase of pain occurred, with collapse, cold extermities and profuse sweating, panting for breath. The abdomen became distended. Perforation was inferred; and the patient died in four hours, from shock.

At the autopsy, forty-three hours after death, the appendix was found in the interior of the pelvis, on the right side, firmly adherent to the surrounding tissues and covered by coils of the intestine. It was gangrenous, and had several perforations. No foreign body was found. The surfaces of the intestine showed recent inflammation, and in places were adherent by a thin layer of fibrin. The peritoneal cavity contained some purulent material. The left kidney and ureter were absent. Right kidney enlarged; capsule not adherent; congested. Other organs normal.

In looking backward upon this case, the following questions suggest themselves:

(1) When the patient entered the hospital, was he suffering from the effects of perforation which tended toward recovery, the fatal result being caused by the shock of a second perforation?

(2) Would examination under ether have cleared up the diagnosis?

(3) In the absence of many of the subjective symptoms, would most surgeons have deemed it advisable to operate?

(4) With a gangrenous appendix in his pelvis and old intestinal adhesions, would an operation have been successfully accomplished?

(5) How much significance should be attached to hiccough in abdominal cases?

(6) Do not cases of so-called ischio-rectal abscess result sometimes from appendicitis in the pelvis, and is not the usual course of such inflammations to find an outlet below?

Such an event is reported[1] by Dr. Vickery, in a somewhat similar case, but with more severe symptoms, in which an exploratory operation failed, and pus was evacuated two weeks later by rectum. In the same number of the Journal an autopsy performed by Dr. John Homans, 2nd, discovered a condition much resembling that found in the case reported above, namely, "appendix sloughed and ruptured, fixed by old firm adhesions to the lateral wall of the pelvis, below the brim, and out of reach of any possible relief by operation, if such had been attempted."

Dr. D. W. Cheever said: It is a part of my early experience, that the frequency of appendicitis with subsequent fatal peritonitis, was first pointed out and insisted on, from twenty to thirty years ago, by the late Dr. J. B. S. Jackson. No operative interference was then thought of, and I can recall five cases, all fatal, from twenty-five to thirty years ago, whose symptoms of perforation and diffused peritonitis were plain and well-marked. Treatment then halted between first, leeching and mercury; second, opium.

Since operative measures were begun, I will recall, briefly, fourteen cases of my own:

(1) A boy of eighteen, in Hingham. Repeated attacks of inflammation in the right iliac region. No operation. Final recovery.

(2) A boy of nineteen, in the hospital. Repeated attacks. No operation. Slight tumor. Incomplete recovery.

(3) A woman of twenty-five, in the hospital. First attack. No marked tumor. No operation. Apparent recovery.

(4) A man of forty. Marked tumor in the right iliac region. No operation. Tumor shrinking, but traces remaining.

(5) A man of twenty-eight. Marked tumor. Symptoms of obstruction. No operation. Subsidence of tumor, and recovery under the use of calomel and salines.

(6) A boy of fifteen. Acute symptoms. No tumor. Tenderness in right iliac region. Operation. Pus evacuated. Improvement. Death from venous hæmorrhage on the seventeenth day.

(7) A child of eight. Symptoms of over a week. Tumor in right iliac region. Operation. Encysted abscess. Recovery.

(8) A man of twenty-five. Acute symptoms. Operation, right iliac region, the fourth day. Pus. Adhesions. Protrusion of the large intestine in the wound. Recovery.

(9) Pain, tumor in left iliac region. Operation

[1] Boston Medical and Surgical Journal, January 12, 1888.

there. Abscess walled off. An orangewood toothpick found in the abscess. Recovery.

(10) Man of thirty-five. Symptoms left iliac region. Operation there. Localized abscess. Recovery.

(11) Prolonged symptoms of obstruction. Tumor in rectum. Tapped per rectum. No result. Finally abscess burst in rectum. Slow recovery.

(12) A woman of thirty. Acute general peritonitis. Operation. Death.

(13) A man of sixty. Latent symptoms of peritonitis. Old pericarditis. No tumor. No operation. Death. Slough of cæcum and general diffused peritonitis.

(14) A boy of twelve. General peritonitis, probably tubercular. Operation. Slow recovery.

Among six cases not operated upon there was one death; mortality, seventeen per cent. Of eight cases operated on, there were two deaths; mortality twenty-five per cent. Of acute diffused peritonitis, not operated upon and operated upon, all died; mortality one hundred per cent. The case of tubercular peritonitis operated on recovered.

Without relying much on this small number of cases, I venture to offer certain conclusions, I have arrived at, in my own mind, in a general review of my experience, which covers both the non-operative and the operative periods. The stages of the disease to be considered are: first, inflammation; second, perforation; third, walling in by lymph; or fourth, diffusion.

(1) The first twenty-four hours of medical treatment are those essential to preventing perforation, if inflammation has begun; or to promote the formation of adhesions, if perforation has taken place. This treatment is recumbency; strict diet; moist heat, incessantly applied; opium.

(2) If the vital resistance of the patient is good, we have prompt adhesions and a wall of lymph.

(3) If no encysting takes place promptly, we have a fatal diffusion.

(4) The presence of a recent tumor is a strong corroborative sign of appendicitis, but not a certain one. The absence of a tumor is an assurance of great danger, if the symptoms are acute.

(5) It is impossible to drain the peritoneal cavity.

DR. R. H. FITZ: For practical purposes, the diagnosis of an appendicitis is based upon the recognition of the signs of a peritonitis, originating in the right iliac fossa. There may be other causes for such a circumscribed peritonitis, as intestinal obstruction from intussusception or strangulation. Again, the peritonitis may be of ovarian, tubal, uterine, vesical, even of rectal origin. The pain of an acute appendicitis may be suggested by a renal or biliary colic, while fæcal impaction in the cæcum or a movable kidney may simulate the tumor. Despite these possibilities, an erroneous diagnosis is not often made.

During the past five years I have seen, chiefly in consultation, upwards of one hundred cases of appendicitis. It has been my usual experience to find the attending physician has made a correct diagnosis and has rightly appreciated the significance of the symptoms. At the same time, during this period I have made an erroneous diagnosis of appendicitis in three cases, and have failed to recognize it in a fourth case. As this experience has already been published, mere reference to it, at present is sufficient. Even in these cases the treatment was appropriate, although the immediate cause of the peritonitis symptoms was not correctly diagnosticated. They are called to your attention, not because similar cases are likely to be encountered, but, because, in a considerable experience, such errors in diagnosis have been made.

What seems to me of even greater importance than accuracy of diagnosis, so easy in general, is the question when medical treatment shall cease and surgical treatment begin. Were perforation actually present, there would be no question in my mind; but I know of no diagnostic means by which one may absolutely determine at the outset, whether perforation is present or absent. In doubtful cases we should wait and treat the patient medically, until we get more direct indication for surgical treatment than may be present when he is first seen.

It is well to bear in mind that, of the cases just referred to, one-half received surgical treatment. Of the half which were treated medically, there was one-eighth which ought not to have been treated thus, since an abscess existed and was discharged, as a rule, into the intestine. But the abscess may discharge into the bladder, which is a very unfortunate complication. It seems to me that to permit the abscess to break into either of these cavities, if it can be avoided, is unwise.

But in most cases we must have more evidence to guide us in treatment than is to be had during the first twenty-four hours, or even later. We ought not to advise an operation at this time on the ground that a perforation may be present, since, in one-half the cases, at least, the patient may recover if no operation is performed. We ought to have this chance, and we should, therefore, wait until the development of the symptoms is such as to indicate that there is either a spreading peritonitis, or such a circumscribing of the peritonitis as to make it probable that the operation will be successful. In waiting for these symptoms, we are to watch the pulse, the temperature, the degree of pain and tenderness, their extension outwards from the region of the appendix, and the development of the tumor, which may take place in the pelvis, the region of the kidney, or the left side. If after three or four days the tumor has developed — and by this time it does develop, if it is to form — its recognition is easy. If there is then no tumor, the indications for operation offered by the constitutional disturbances are very direct.

In my opinion, then, it is desirable to wait for three or four days, at least, after the onset of the symptoms, in order to watch the progress of the case, for the purpose of deciding whether it will recover under medical treatment, or whether it will demand surgical treatment. This waiting is not only suggested by the experience in acute cases, but it is confirmed by those cases of chronic appendicitis in which the patient has localized disturbances for months and months. Every now and then there will be an acute exercerbation, often keeping him in bed for a few days. These, however, are the cases which, to my mind, are much better operated upon, if they are to be treated surgically, in the interval between the attacks, than at the onset of an acute attack.

(To be continued.)

PROFESSOR VIRCHOW. — A portrait medal of Rudolf Virchow is to be struck by Anton Scharff of Vienna, in honor of the great pathologist's seventieth birthday on October 13th next.

MAINE MEDICAL ASSOCIATION.

THIRTY-NINTH annual meeting at Portland, June 9, 10, 11, 1891. The Association met in the Common Council Chamber, City Building, Tuesday, June 9th, and was called to order at 10.20 A. M., by the President, DR. SAMUEL B. HUNTER, of Machias.

The session was opened with prayer by Rev. Dwight M. Pratt of the Williston Church.

The morning hours were given up to the Treasurer's report, matters of routine business and a paper by DR. JAMES A. SPAULDING on

EYE AND EAR OPERATIONS, AND CASES AT THE MAINE GENERAL HOSPITAL.

The question of "What cases demand immediate enucleation after injury?" claimed most attention in the paper and the following discussion.

The essayist illustrated the cases in which the eye may be allowed to remain, by a typical case, in which the injury, although extensive, was not in the cilliary region, was not deep enough to penetrate the vitreous and cause septic infection of the eye, no prolapse of iris or retinal detachment, so that there was a possibility of recovered sight and no probability of sympathetic inflammation. On the other hand, it was laid down as a rule without exception, that the eye of a child less then ten years of age, with a perforating injury of any sort, in any region of the eye, ought to be enucleated at once, by reason of the greater tendency of children to sympathetic ophthalmia.

Attention was called to the beneficial effect of resection of the optic nerve far back, in cases where enucleation of the injured eye has not prevented the transmission of the disease to the sound eye.

A number of cases of glaucoma were attributed to the thoughtless use of atropine in the inflammation of the eyes of elderly people.

AFTERNOON SESSION.

The Address of the retiring President, DR. SAMUEL B. HUNTER, of Machias, dealt principally with the marked changes in medicine and medical teaching during the past decade, and deplored the lack of an efficient registration law for Maine. The idea was suggested, although admitted to be now impracticable, of a registration law which should be national in scope and administration.

DR. J. E. WALKER, of Thomaston, read a paper on

PSEUDO-HYPERTROPHIC PARALYSIS.

DR. IRVING E. KIMBALL, of Portland, presented a paper on

ADENOID VEGETATIONS OF THE NASO-PHARYNX.

The writer detailed the characteristic symptoms and physical signs of this affection in children, and exhibited photographs of illustrative cases, before and after operation.

CATARACT, ITS TREATMENT, SURGICAL, HYGIENIC AND DIETETIC,

was the subject of a paper by DR. WILLIS B. MOULTON, of Portland.

Particular stress was laid upon the necessity of securing by hygienic and dietetic measures the best possible nutrition and nervous tone, not only to prepare for surgical treatment, but to secure the happiest results after its employment.

The conditions for perfect results in operation for cataract were outlined as: "Early operation," "modified linear section with iridectomy," "strict antisepsis," "limited confinement," "absolute non-interference with the eyes for four or five days unless demanded," "careful and restricted diet, mostly nitrogenous for two weeks before and after the operation."

In the discussion following, DR. JAMES A. SPALDING called attention to the unpleasant results often accruing to patient and surgeon from removing early a commencing cataract when vision is fairly good, and substituting for it the disturbed vision consequent upon attempts to make the sound eye wear a glass to approach the new vision of the eye operated upon after it is fitted with a proper lens.

DR. J. J. COBB, of Milan, N. H., read a paper on

INTESTINAL ANTISEPTIC MEDICATION.

A paper by DR. H. M. SAWTELLE, United States Marine-Hospital Service, on

PROGRESSIVE MUSCULAR ATROPHY,

was illustrated by a patient exhibiting the characteristic appearance of this somewhat rare disease. The patient's hands had the peculiar clam-like appearance due to wasting of the extensors, and contraction of the flexor muscles. Face, hands and feet were of a purplish color, and the general hue of the skin all over the body was bronze; the skin was thickened and sensation almost everywhere blunted. This was particularly well shown over skin of back, buttocks and portions of thigh and legs. The muscles now involved in the atrophic process are those of the forearm, especially extensors of ulnar side, pectorals, deltoids, and trapezius, and those of neck, face and feet. The cause of the spinal degeneration in this case was regarded as specific.

EVENING SESSION.

DR. ADDISON S. THAYER, City Physician of Portland, read a paper on

GASTRO-INTESTINAL DISORDERS IN CHILDREN.

Milk sterilized by steam heat was urged as preferable to almost, if not all, other infant foods. Use of opiates, either by mouth or hypodermically, was deprecated; "the paralyzing of a bowel already feeble in its resistance against poisonous irritants seems justified neither by reason nor experience." Lavage of the large intestine by mild antiseptic douches was advocated, and met with cordial endorsement from members who were familiar with its use.

A paper by DR. M. C. GOODRICH, of Waterville, on

CIRCUMSCRIBED OSTEO-MYELITIS INVOLVING LEFT KNEE-JOINT,

brought out the opinion of members as to the comparative merit of the various drugs used to resuscitate patients from surgical shock.

DR. A. P. DUDLEY, of New York, expressed preference for strophanthus hypodermically, over either whiskey or digitalis.

DR. L. W. PENDLETON, of Portland, believed no remedy to equal atropine in doses of one one-hundredth of a grain.

SECOND DAY, JUNE 10TH.

By unanimous vote the Association adopted resolutions of congratulation to be presented to the New

Hampshire Medical Society at its approaching hundredth anniversary.

DR. W. E. ELWELL, assistant surgeon at the National Home, Togus, read a paper upon

HEART-STRAIN

based upon observations upon the veterans of the War of the Rebellion. It was stated that seventy per cent. of all admitted to these National and State homes had some abnormal and weakened condition of the heart. In a majority of cases the symptoms are only present at intervals or upon exertion, but in all cases so constantly manifest in their effects as to render its subjects incapable of labor, and predisposed to other diseases. This condition was attributed to over-mental and physical strain during service.

DR. I. T. DANA, of Portland, thought it would be difficult to show that a large proportion of these cases originated as a consequence of army service. He thought the same condition obtained in an equally large per cent. of cases in civil life after the changes of advancing years became manifest, and that over-stimulation and all unusual muscular or mental fatigue tended to exert an untoward influence upon the heart.

DR. E. M. FULLER, of Bath, said from his service as pension examiner, he believed malarial poison to have been more often the cause of this condition than excitement before or during battle.

DR. SARAH ELLEN PALMER, of Boston, read a paper descriptive of Apostoli's method of treating uterine and ovarian affections by the electric current.

DR. C. M. COBB, of Mechanic Falls, read a paper upon

HIP-JOINT DISEASE, A RESULT OF TRAUMATISM,

and exhibited a patient showing the favorable results of Gaut's operation to relieve extreme abduction and flexion.

DR. GORDON, of Portland, favored Owen's plan of treatment by early aspiration of the affected joint.

The report of visitors to the Maine Insane Hospital by DR. A. J. FULLER, of Bath, elicited some criticism by members, of the action of the last legislature in refusing the appropriation for the new insane hospital at Bangor. The facts relative to this curious piece of legislation, after a lot had been purchased and plans drawn for the new buildings, seem to be that in the universal scramble for appropriations which characterized our last legislature, it was made to appear by those interested in certain schemes that this call for money was for the local interests of Bangor, and prejudice defeated a measure which the interest of humanity demanded, as every physician in this State can testify.

With a daily average at the Augusta Hospital of 612, and patients sleeping on the floors of the corridors in spite of the additional room gained by the new pavilions, the legislature has reason to feel far from proud of this performance.

ANNUAL ELECTION OF OFFICERS.

The list for 1891–92 is as follows: President, Dr. Edwin M. Fuller, Bath; First Vice-President, Dr. Bigelow T. Sanborn, Augusta; Second Vice-President, Dr. George A. Philips, Ellsworth; Recording Secretary, Dr. Charles D. Smith, Portland; Corresponding Secretary, Dr. C. E. Williams, Auburn. Board of Censors: Dr. H. H. Smith, Machias; Dr. E. T. Andrews, Gray; Dr. Charles Hutchinson, Portland; Dr. C. A. Peaslee, Wiscasset; Dr. C. D. Hill, Bethel. Committee on Publication: Dr. Charles D. Smith (*ex-officio*) Portland; Dr. F. H. Gerrish, Portland; Dr. A. K. P. Meserve, Portland; Dr. E. H. Hill, Lewiston; Dr. H. F. Twitchell, Freeport. Business Committee: Dr. F. E. Small, Portland; Dr. Wm. Lawrence Dana, Portland.

DR. S. C. GORDON read a report of

CASES OF ABDOMINAL SECTION DURING A THREE MONTHS' SERVICE AT THE MAINE GENERAL HOSPITAL.

These numbered fourteen in all, and there was but one death and that from cancer.

Among these of special interest was one in which over a foot of small intestine was removed with a tumor, the ends of the intestine closed by Lembert's suture, and anastomosis established by lapping the ends of the intestines together, making an opening about an inch from the ends and sewing together. The patient returned to her home well, having passed to recovery without accident, and is now pursuing her household duties.

Another patient was an infant of fourteen months, operated upon for relief of peritoneal effusion of tubercular origin. Patient was discharged recovered, but died in about two months from tuberculosis pulmonalis. Special stress was laid upon the treatment of peritonitis by salines instead of by opiates, regarding the disease as a condition to be treated independent of cause.

DR. G. A. COOMBS, of Brunswick, presented a paper on

DEPRESSED FRACTURES OF THE SKULL,

which urged immediate exploratory incision even if no cerebral symptoms presented.

DR. T. A. FOSTER, of Portland, presented the report of the necrologist. But three members have died during the year: Dr. O. E. Ross, of Rockport; Dr. N. R. Boutelle, of Waterville, and Professor Fordyce Barker, of New York.

DR. E. E. HOLT, of Portland, read a paper on

REMOVAL OF FOREIGN BODIES FROM THE VITREOUS.

The writer's opinion inclined to removal of such bodies by operation if the sight were destroyed even though they cannot be located or attracted by the magnet.

DR. F. H. GERRISH, of Portland, Chairman of the Committee on securing change in the Anatomical Law, reported the operation of the present law entirely satisfactory, and the risk of attempting to secure any change, too great to be invited.

EVENING SESSION.

This was devoted to the

ANNUAL ORATION

by DR. S. C. GORDON, of Portland.

Following the oration, a reception was given by the resident members, to the Association and visiting delegates and ladies.

THIRD DAY, JUNE 11TH. — MORNING SESSION.

The customary votes of thanks were passed and the session closed with the acceptance of the report of the Board of Censors and the adoption of its recommendations.

The appointments for the year are as follows: Orator, Dr. J. L. M. Willis, of Elliot. Delegates to American Medical Association, Dr. S. B. Hunter, Machias; Dr. B. F. Dunn, Portland. Necrologist, Dr. Alfred King, Portland.

The next meeting will be held as usual in Portland, but is changed to the second Wednesday in June instead of the second Tuesday, as heretofore.

The meeting was unusually large, and the papers of more than usual excellence. Delegates were present from the New York State Medical Society, from New Hampshire and Rhode Island.

Recent Literature.

Practical Electricity in Medicine and Surgery. By G. A. Liebig, Jr., Ph.D., and George H. Rohé, M.D. 8vo, pp. viii, 383, with 253 illustrations. Philadelphia and London: F. A. Davis. 1890.

Our best treatises on electro-therapeutics have been written almost solely from the standpoint of the neurologist, and are now eight or ten years old. Since their publication, with the advance in the uses of electricity, the application of electricity to medicine and surgery has greatly increased. We need, therefore, a work which will deal with electricity from a much more general standpoint, and will guide us in the problems of electrolysis, electric lighting, electro-motors, and in all the various ways in which electricity is now brought into play. We hoped that the present work would satisfy this need. It should, as the present writers say, "be eminently practical, and should deal with such matters only as have a direct bearing upon the requirements of the practitioner. The book should be free from unnecessary technicalities, and only so much attention should be devoted to theory as is demanded in the explanation of such phenomena as are presented in the medical and surgical uses of electricity." In conclusion they say, "less attempt has been made to include everything written upon the subject than that nothing untrue should be contained within the covers of the book."

Unfortunately, the book comes very far short of answering these requirements. A hundred and forty pages are devoted to electro-physics. This is by no means a simple consideration. The writer begins by the statement that it is impossible to say what electricity is, which must be admitted, but if it be admitted that electricity, like heat or light, is a form of motion, and if the electricity derived from chemical action be first considered, the problems become simpler to those unskilled, as most physicians are, in the problems of physics. Instead of this the writer starts with the consideration of static electricity and lines of force, and the whole section is far from plain to any one unacquainted with physics. Its frequent formulæ and its strictly technical considerations render it very difficult of comprehension to the ordinary physician, even though he know more of electricity than most physicians do. Although well equipped technically, and usually accurate in his statements, there is a striking want of harmony between this and the other sections of the book. In the description of the various cells no account is given of the Leclanché, which later on is spoken of as the best for a stationary battery. The writer takes the only correct view of the question of the length of wire in a secondary coil, namely, that a longer wire interposes more resistance and diminishes the electro-motive force, yet later on statements are made, without correction, as to coils of long, thin wire giving the high tension current. Furthermore, many of the forms of apparatus, galvanometers, commutators, etc., described are suitable only for the physical laboratory, and not for the physician's use, while De Watteville's commutator for the combined currents receives no mention.

Technical and complicated as the first part of the work is, it is much better than the rest of it. This is largely a compilation, and much of it is of poor quality. The writer, for instance, claims that galvanism can directly influence the cord, and cites as a proof the benefit obtained by galvanism in tabes, whereas most neurologists doubt that benefit, and nothing indicates that galvanism produces any physiological effect upon the cord. Twenty-five pages are rather needlessly devoted to a verbal description of the motor points, which is far less clear than the diagrams. Some little attention is paid to the density of the current, but the accepted standard for the sizes of electrodes is not given, nor are Stintzing's tables of the different forms of the reactions of degeneration given. The chapter on special electro-therapeutics is confessedly a compilation, and the author does not even venture to act as a guide. Hence we find the methods suggested for the treatment of all manner of affections without regard to the suggester. Indeed the writer practically assents to the electrolytic treatment of urethral stricture, and seems willing to accept electricity as a panacea. As a minor suggestion we would urge the retention of the German notation in electro-physiology, as conducive to clearness and uniformity.

The book is a disappointment. It gives the impression of having been written in part by an electrician whose knowledge of the demands of medicine on electricity was slight and whose ideas as to the attainments of the physician and his ability to comprehend physics were greatly exaggerated, and in part by a man whose knowledge of electro-therapeutics was based, not on practical experience, but upon rather indiscriminate reading. It is not to be commended as a satisfactory guide to medical electricity.

Plain Talks on Electricity and Batteries: with Therapeutic Index. By Horatio R. Bigelow, M.D. 16mo; pp. viii, 85; 43 illustrations. Philadelphia: P. Blakiston, Son & Co. 1891.

This little work claims to be a "plain, practical presentation of a difficult subject." The opening chapter gives briefly a definition of the more familiar terms used in electricity; and then chapters are devoted to static electricity, galvanism and faradism. Some indications are given as to a choice of instruments, but these indications are incomplete. Nothing is said as to electro-physiology or electro-diagnosis. The therapeutic index is of some value, but it is incomplete and untrustworthy, and not a valuable guide for the inexperienced practitioner. The author's knowledge of the physics of electricity is not great, and he still clings to the idea that there is an actual difference in quality between the currents from the primary and secondary coils. The tyro in electro-therapeutics needs something more than this little volume, and the expert would find no use for it.

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DIPHTHERETIC PARALYSIS.

GUBLER, in 1861, published an able memoir on diphtheritic paralysis, in which he endeavored to show that the paralysis which follows diphtheria has nothing specific about it, and that similar paralyses may accompany all acute diseases. Diphtheritic paralysis, in his opinion, is the result of propagation of a pharyngeal, palatine, laryngeal, nasal inflammation to certain nerves — facial, palatine, trifacial, olfactory, auditory, vagus, branches of the sympathetic, etc. — or else it is simply the consequence of that asthenia which is consecutive to all grave maladies. It is hardly necessary to say that this view has long been abandoned.

By most authorities, it was regarded as the type of essential paralyses (*sine materia*) till Charcot and Vulpian in 1862 discovered in a well-marked case (autopsy) the existence of neuritis of the palatine nerves, without any alteration of the nervous centres. This observation was subsequently confirmed by Lorain, Lionville and Lepine; and Sanné in his remarkable treatise based on these facts his theory of peripheral paralysis, or, as we should now call it, peripheral neuritis.

But Bahl, as far back as 1867, had found in a case of diphtheritic paralysis pronounced neuritis of the spinal nerve roots corresponding to the origin of the paralyzed nerves; there was extravasation of blood and thickening of the neurilemma. In 1875, Roger and Damaschino in four autopsies noticed alterations similar to those which Bahl had described.[1] Similar observations were made by Dejerine in 1878. In 1876, Vulpian at the autopsies of three children who died of diphtheritic paralysis, noted "a modification of the nerve-cells of the anterior cornu of gray matter with rarefaction of the connective tissue of the external and posterior part of this cornu."

Three years later (1881) Landouzy as the result of his studies formulated for diphtheritic paralysis the following pathogeny:[2] "In consequence of the diphtheritic toxæmia, the spinal cells suffer and undergo alteration; they determine secondary degenerative lesions of the anterior roots, then of the nerves; but these lesions are superficial and susceptible of repair."

The most clear and satisfactory explanation of the paralyses which follow diphtheria is that furnished by Roux and Yersin, whose researches going to show that the Klebs-Löeffler bacillus is the cause of diphtheria, are now well-known. The paralysis is due, not to impregnation of the organism by the bacillus, but by the poison (tox-albumen) secreted by the bacillus. This has been proved by filtration of the soluble products of a diphtheritic culture, and the inoculation of animals with the filtrate which contains neither spores nor bacilli. Since the bacillus is not the direct agent of the toxæmia, but a product which it elaborates, we understand how the anatomical form of the pseudo-membranous affection has but a slight influence on the production of the paralysis, and how it is that the latter succeeds not only the grave and prolonged anginous attacks, but also the circumscribed and temporary localizations of the diphtheria. We also understand why the paralysis is not synchronous with the pseudo-membranous manifestations, but develops later when the microbes have disappeared, and after they have had time profoundly to alter the constitution of the blood.[3] In fact, before the paralytic accidents show themselves, there is a period of incubation of at least a fortnight, and sometimes longer.

Rendu, who has treated this subject at some length from the stand-point of latest researches, remarks that the old view which attributes the paralysis of the velum pendulum, pharynx, etc., to diffusion of an inflammation from the pseudo-membranous focus, is to be modified by the more correct doctrine that the poison is more likely to act first on the nerves nearest the point of inoculation, and in fact, it is often limited to these regions. But it is certain, on the other hand, that we have to do with something more than a mere local impregnation with the poison, as in the majority of cases we see the paralytic symptoms diffuse themselves progressively. It is equally certain that the diphtheritic poison acts exclusively on the nervous system by determining functional rather than destructive modifications.

[1] Cadet de Gassicourt: Maladies des Enfants, t. iii, p. 405.
[2] Rendu: Lecons de Clinique Medicale, t. ii, p. 335.

PETROLATUM.

AT the time of the publication of the Pharmacopœia of 1880, different forms of ointment made from petroleum were in common use, largely under the names of vaseline and cosmoline. The officinal word, petrolatum, was introduced to describe certain of these products, the definition of the word in the Pharmacopœia being, "A semi-solid substance, consisting of hydrocarbons, chiefly of the marsh-gas series, obtained by distilling of the lighter and more volatile portions from American petroleum, and purifying the residue. Melting point about 40° C. to 51° C."

Many similar products of petroleum now in common use do not come under this definition, and are commonly

[3] Rendu: Loc. cit.

known by a variety of different names. At a recent meeting of the Philadelphia County Medical Society, Dr. John Aulde showed a number of specimens of these various products, and gave a description of their production and use.

During a visit to a large factory where these products are made from crude petroleum, Dr. Aulde was told by the workmen that when they have a bad cold they fill the nostrils with cosmoline and the trouble is quickly relieved.

These products are obtained by fractional distillation. The first twenty per cent. is called naphtha, and embraces several substances, such as rhigolene, benzine, naphthol, etc. The next fifty per cent. that passes over is composed of illuminating oil. This leaves about thirty per cent., fifteen of which is called neutral product, and fifteen per cent. called petrolatum stock. From this last cosmoline is manufactured. The neutral product is decolorized by filtration through bone black. It contains a certain proportion of paraffine wax. This neutral product corresponds closely to teraline, which has been extensively advertised as a remedy for consumption. The paraffine is removed by crystallization and freezing. Teraline may be of great benefit, because it contains this wax. There is also obtained a colorless product called glycoline, alboline, and by several similar names. This is an oil with the paraffine and coloring matter removed. It is made both as a liquid and as a semi-solid substance. The liquid paraffine of the German Pharmacopœia closely corresponds with this product. Preparations of petroleum stock may vary in color from white to dark yellow. It has been found that the colored petrolatum products produce discoloration of the skin. Cosmoline is perfectly innocuous, and may be taken into the system without harm.

In the discussion on this paper, Dr. S. Solis-Cohen said that crude petroleum is very valuable in the treatment of pulmonary complaints, especially of certain stages of phthisis. It is useful combined with iodoform. Two or three grains of iodoform may be combined with an equal quantity of crude petroleum, and administered in capsules. So-called alboline, or a modification of it called benzoinol, is useful as a vehicle for menthol and other agents to be applied to the respiratory mucous membrane.

Among other points brought out by the discussion, may be mentioned the fact that these products are the most valuable part of the petroleum distillation. The first seventy per cent. of the distillate is worth probably five cents a gallon, while the remaining thirty per cent. is worth from twelve to twenty-five cents a gallon. The quantity of these products manufactured has been steadily increasing.

A few years ago an effort was made in France to introduce petroleum products as vehicles for the hypodermic use of remedies. It was shown that the purified oils were innocuous, and it was shown that in this way twenty minims of purified creosote could be introduced at a single dose.

MEDICAL NOTES.

A Japanese Pharmacopœia will shortly be published. It is now under revision by the Central Sanitary Board of the Home Department.

Electrocution. — The second execution by electricity under the law of New York took place at Sing Sing on Tuesday. Four murderers were killed in succession. From the accounts of witnesses present it appears that in each case death was instantaneous and painless. The voltage was about 1,500 and the current continued for twenty seconds, and a little later repeated. The electrodes were placed upon the forehead and calves of the legs.

The Censors of the College of Physicians, Philadelphia. — The resignations of the Board of Censors of the College of Physicians have been placed in the hands of the Secretary. This action was taken because the college by a vote of forty-five to forty postponed consideration of the board's recommendation that a prominent member of the college, be censured for using slanderous language toward a member of the Fellows of the college. It is understood that the final retirement of the board will depend largely upon the action that may be taken by the college at its September meeting.

Yellow Fever in Georgia. — It is reported that two cases of yellow fever have been discovered in Brunswick, Ga., one of the patients being a pilot who brought a foreign brig into port. Something like a panic has broken out, many families having left the place.

Cholera in Spain. — The *Correio Medico*, of Lisbon, says that rumors of cholera are again beginning to be heard from Spain. Telegrams received in Lisbon from Valencia state that some "sufficiently marked" cases have occurred in that province, and the authorities at Madrid have taken steps to check the spread of the disease. As usual, the official press denies everything.

The Importation of Disease. — Surgeon-General Wyman, of the Marine-Hospital Service, has suggested, as a precaution against the importation of small-pox and other diseases by means of the baggage of immigrants, that the States for which the immigrants are destined, be furnished with a list of persons who come in vessels which have been or are infected or which come from ports at which contagious diseases prevail.

Abolition of Effeminate Words. — With the advent of women in positions formerly occupied only by men, the fair sex apparently consider it more manly to adopt masculine titles and masculine word-terminations. We have become quite accustomed to such words as chairman and doctor; but it seems as if it were carried too far, when we hear that Dr. Grace Danford, of Dallas, said, in an address to the Texas Medical Society, that she had had a predilection for the medical profession since her *boyhood*.

HYPNOTISM IN FRANCE. — The Society of Hypnology will meet in Paris on July 20th, under the presidency of Dr. Dumontpallier. The business to be done will include the organization of a second international congress of hypnotism to be held in 1892. Among the subjects proposed for discussion are the following: "The Relations of Hysteria to Hypnotism"; "Criminal Suggestions and Penal Responsibility"; "The Reality of Maternal Impressions on the Fœtus."

CIRCUMCISION IN EXCELSIS. — A remarkable custom obtains in Turkey, says the *Medical Press*, which is carried out at the expense and under the direction of the Sultan. It appears that three of the Sultan's sons are "ripe for the operation of circumcision," whatever this may mean, and custom enjoins that all the other little Turks in the Empire who are of or about the same age as the young princes, shall submit to the same procedure at His Majesty's expense. In order to make due provision for this interesting event, a palace is fitted up for the occasion. The patients, who are said to number five thousand, are housed, clothed and fed for a week out of the Sultan's privy purse, and at the end of that time each receives a gift of money before being sent back to the bosom of his parents.

THE ENGLISH CENSUS. — The returns of the census for England and Wales have been so far made up as to show that there were on the day of enumeration about 29,000,000 inhabitants. The completed revised figures will not, it is said, materially change the total. This will make, in the last decade, an increase of about three million, or 11.64 per cent. This is the smallest recorded rate of gain since census-taking began in Great Britain. During the decade just closed there has been a decline of the marriage-rate. In 1881 it was 15.5 per thousand; in 1889, 14.7. In 1853 it was 17.9 per thousand. In the past fifteen years the birth-rate has fallen from 36.3 in 1876 to 29.7 in 1890. In 1890 the excess of births over deaths in England and Wales was but 308,267 against an average for the preceding five years of 366,013. The population is now three and a half times as large as it was in 1801.

THE FOOD OF A STOWAWAY. — The *Lancet* reports the autopsy on the body of an Arab stowaway, found dead on a vessel in London. Several patches of inflammation were found in the small intestine. In the cæcum were found twenty trousers buttons, three cog-wheels (apparently out of a watch, two of them one inch in diameter — these were double), one two-inch steel screw bent double and one one-inch screw, six pieces of a lock (the biggest piece was one and a half inches long and one-half inch broad), a circular piece of brass (one and three-quarter inches in diameter folded into four), several pieces of iron wire (four were one and a half inches in length), brass, and lead, and two key tallies on a ring, one inch in length. In the ascending colon, about five inches from the cæcum, were found a piece of steel wire one-eighth of an inch in diameter, and three inches and half in length, bent double, and one small cog-wheel. The weight of these bodies together amounted almost exactly to half a pound. The body was much emaciated; no subcutaneous fat was present in chest or abdominal walls, or any fat round the kidneys. The deceased was quite unknown; no particulars could be discovered by the police employed to obtain evidence for the purpose of the inquest. There was no perforation of intestines, or any sign of disease in the colon.

ETHER-DRINKING IN NORWAY. — The *British Medical Journal* says that the theory has been more than once advanced that the origin of ether-drinking in Ireland can be traced to the success of Father Matthew's crusade against drunkenness in its ordinary forms. Alcoholic nature, driven out by his eloquence, returned in a new disguise, and the last state of the victims was as bad as the first. This theory has been called in question, but it receives accidental confirmation from what is at present happening in Norway. The sale of liquors is, in that country, encompassed about with more restrictions than that of the most deadly poison is with us; temperance, in fact, is the law of the land in Norway. But these people made sober by Act of Parliament, have now discovered how to get drunk without violating the law. Ether-drinking, according to a Norwegian contemporary, is becoming quite common in certain districts. The farmers buy it in considerable quantities, especially at Christmas time and on other festive occasions, and they treat each other and get drunk on ether, as they formerly did on potato or barley brandy. Ether is said to be drunk by young and old men and women, rich and poor. If this be true, it seems to point a moral which perhaps thoroughgoing temperance advocates have not taken sufficiently into account. Is there, after all, a grain of truth in Byron's thesis that "man being reasonable must get drunk," and can the moderate use of ordinary stimulants be suppressed only at the risk of the evil spirit, which has been cast out, coming back after the house has been swept and garnished, bringing with him seven devils worse than himself?

Miscellany.

AN UNRECORDED SYMPTOM OF PERTUSSIS.[1]

AMONGST the premonitory symptoms of whooping-cough authors mention conjunctivitis with excessive lacrymal secretion; but according to Dr. Huguin of Tourteron, to these ocular symptoms there should be added photophobia, with dilatation of the pupil, which he has observed pretty constantly in cases under his care, and that in the absence of all medicinal treatment, by belladonna or otherwise. His attention was first drawn to these hitherto unrecorded signs by the cases of two children, aged six and eight years respectively, in whom were present, in addition to the cough, not yet characteristic of the catarrhal period of the

[1] Lancet, June 13th.

disease, marked dilatation of the pupils, with photophobia. Some time afterwards, while still in professional attendance on the children, a servant girl aged eighteen, in the same household, in whom there was as yet no suspicion whatever of the ordinary symptoms of whooping-cough, was found to be affected with photophobia and dilatation of the pupils. Pertussis was, however, diagnosed, and this diagnosis was subsequently proved to be well founded by the supervention of the characteristic cough of a typical whooping-cough.

EXTERNAL MIGRATION OF THE OVUM.

Varicela[1] concludes, from the results of ten experiments on female rabbits in which the ovary of one side and the tube of the other had been removed, that the external migration of the ovum, although rare, is incontestable. Only part of the ova are able to reach and enter the tube of the opposite side. Although it requires more time for the ovum to pass from the ovary to the tube opposite than to the tube of the corresponding side, still in doing so it retains its aptitude for fecundation. The external migration of ova experimentally produced was in no case the cause of extrauterine pregnancy. Granting the integrity of one ovary and of the opposite tube, not only fecundation, but also intrauterine pregnancy, are possible.

TACHYCARDIA.

Fraentzel[2] defines this disease as one without demonstrable organic heart lesion, in which repeated sudden attacks of rapid heart action occur and as suddenly disappear. The number of beats may reach one hundred and forty and over per minute. He considers most of the cases to be due to paralysis of the inhibitory fibres of the pneumogastrics, and others to irritation of the accelerator fibres of the sympathetic. The former may sometimes be controlled by digitalis, or by pressure over either or both pneumogastrics in the neck. The latter may frequently be controlled by a single dose of morphia. It is sometimes difficult, however, to determine to which of the two groups a case belongs. The author closes his article by quoting the following case: A man, aged thirty-five, complained for three months of sudden severe palpitation of the heart. The heart's dulness was increased; there were no murmurs. While in the wards, the patient had two attacks which responded to digitalis. A third attack occurred, with rapid dilatation of the heart, in which the patient died. The post-mortem showed dilatation of left ventricle and hypertrophy of right, much increase of fibrous tissue in both ventricles and fatty degeneration of the left.

CULTIVATION OF THE LEPROSY BACILLUS.

Dr. Beaven Rake and Dr. G. A. Buckmaster,[3] members of the Leprosy Commission, have during the last two months and a half been engaged in bacteriological work at Almora Leper Asylum and in the new laboratory which has been built at Simla by the Government of India for the use of the Commission. They have now succeeded in cultivating the leprosy bacillus in serum from a blister. The first series of experiments, begun on March 31st, proved negative. On April 14th a blister was raised over a tubercle on the face of a leper at Almora, and another over normal skin on the back of the same patient. Specimens of the fluid from these blisters were taken in a sterilized capillary tube, and allowed to mix. Previous examination of blister fluid over a tubercle in this patient had shown leprosy bacilli. The capillary tube was kept at a constant temperature of 98° F., and was taken to Simla, where microscopic examination on May 2d showed some brightly stained leprosy bacilli and some turbidity of the liquid. On May 14th a tube of bouillon was inoculated from this tube of serum, and on May 26th there was an undoubted growth of leprosy bacilli on the surface of the bouillon. From this culture vigorous growths of leprosy bacilli were also obtained on gelatine and agar. Another capillary tube of serum prepared in the same way from another leper gave precisely similar results.

VOMITING OF PREGNANCY AND HYSTERIA.

Kaltenbach[1] holds that the clinical history and the "cures" of cases of uncontrollable vomiting of pregnancy indicate that the disease is essentially due to hysteria. Pregnancy involves physiological and psychological conditions favorable to the development of hysterical symptoms in a modified form. Hyperemesis is often cured by a process akin to suggestion, like ordinary hysteria. "Doing something," dilatation of the os, massage, etc., often succeeds if the practitioner gains the patient's confidence, and hosts of drugs have answered, apparently under the same conditions. On the other hand, all these vaunted medicines and operations have failed when employed by physicians who possibly did not possess as much tact as knowledge. Hyperemesis may suddenly cease if the patient be alarmed, as in a case of the author, where the patient was reduced to a skeleton; a day being fixed for the induction of labor, her friends frightened her by saying that she could not survive such an operation. The vomiting ceased. The same sudden arrest of hyperemesis was observed by Cazeaux in a young wife whose husband was seized with symptoms of strangulated hernia. In a third case, the vomiting ceased on the outbreak of an acute exanthematous fever. Kaltenbach describes a bad case where the patient, aged twenty-one, made an unhappy marriage, and was unkindly treated by her husband. Very severe vomiting set in during her first pregnancy, and she was sent into a hospital. It was suggested to her that she had lumps of unwholesome material in her stomach, and that their removal would cure her. Some milk was given to her, ceremoniously, and shortly after the stomach was washed out. Its contents bore no indications of either over-acidity or any abnormal ferment. The patient was then informed that all was right, and that the vomiting would not return. It ceased accordingly, and she was safely delivered at term. In short, Kaltenbach urges that hyperemesis gravidarum should

[1] Annali di Obstetricia e Ginecologia, October, 1890.
[2] University Medical Magazine, from Deutsche med. Woch., February 26.
[3] British Medical Journal, June 27th.

[1] Zeitschrift f. Geburtsh. u. Gynäk., vol. xxi., pt. 1.

be treated as a purely hysterical complaint. Prompt treatment is indeed necessary, for as in hysterical vomiting of non-pregnant women the patient may, if at first neglected, die of syncope or nervous exhaustion even when the vomiting has been stopped. But isolation from domestic cares and imprudent friends, with appropriate moral treatment, should be enforced before so extreme a step as artificial abortion is undertaken.

PARENCHYMATOUS ASPIRATION.

DR. ALBERT ABRAMS[1], of San Francisco, describes, under the above title, a method of obtaining pathological products for diagnostic purposes. The method consists essentially of withdrawing by means of a hypodermic syringe, certain products from pathological formations in solid tissues, and the examination of these products by the microscope. The syringe used has a large barrel with a capacity of ten grammes, the object of the large barrel being to secure better suction. Products are removed by aspiration only, there is no harpoon action, and no destruction of tissue other than that produced by a needle.

After numerous experiments on animals, the author punctured the pathological lung more than fifty times for diagnostic, but mainly for experimental purposes, and the only ill effects observed were syncope in one case, hæmoptysis lasting a day in another case and circumscribed pains limited to the punctured points of short duration in two other cases. Parenchymatous aspiration was made with lungs the seat of tuberculosis, pneumonia and syphilis. In undoubted cases of tuberculosis of the lungs and bronchial lymphatic glands, the bacilli of tuberculosis could only be demonstrated in the aspirated products in about forty per cent. of the individuals punctured. Failure to demonstrate the bacilli in all cases was largely attributed to errors in technique, which were partially removed after further trials.

In some cases the syringe having been partially filled with an indifferent solution of salt this was injected into the punctured tissues, the needle remaining *in situ*; after waiting until the fluid had presumably taken up sufficient pathological products, it was then withdrawn. The number of bacilli found in the specimens examined was, as a rule, small, although in a few instances veritable colonies of the bacilli could be seen. Only two cases of croupous pneumonia were punctured, in both of which pneumococci were found. Tubercle bacilli were found in a case of cervical glands. By aspiration the bacillus lepræ was invariably found in leprous nodules, infiltrations and neighboring lymphatic glands.

The author concludes that parenchymatous aspiration is, when conducted with antiseptic precautions in all new formations not necessitating visceral puncture, a harmless procedure. In normal viscera, it is rarely attended with danger, owing to the elasticity of physiological tissues. Hæmorrhage may possibly follow aspiration in disease of the viscera, owing to diminished tissue elasticity and pathological changes in the blood-vessels, but the necessity for a correct diagnosis justifies in properly selected cases the slight risks attending parenchymatous aspiration. It is of value in the diagnosis of pulmonary tuberculosis with lung consolidation, in which the sputa fail to reveal the presence of the bacillus tuberculosis, or when consolidation is present but no sputum, it may furnish the earliest evidence of the disease. In surgical tuberculosis of the lymph glands, bones, joints, skin, testicles and other structures, it is of undoubted importance, and it may be of value in the diagnosis of tumors, either superficial or deep seated. In amyloid degeneration of the viscera, it may furnish the only evidence of the affection. In malaria, typhoid fever and other infectious diseases, puncture of the spleen may prove of inestimable value in diagnosis. Leprous lesions of the external parts or viscera, may be correctly diagnosed by the aid of parenchymatous aspiration.

[1] From a paper read before the Medical Society of the State of California, April 21, 1891.

THE TREATMENT OF HÆMOPTYSIS.

IN a paper published in the *Zeitschrift für Therapie* for April 1, 1891,[1] Professor Nothnagel calls attention to the fact that the most essential feature in the treatment of hæmorrhage from the lungs is that the patient should be kept absolutely quiet, should not be allowed to speak, the room should be kept at a moderate temperature, and he should eat nothing warm, and his food should be of the most readily digestible character, cold milk being preferable to anything else; and, in fact, he advises that for two days the diet shall be confined solely to cold milk. It used to be taught that coughing was of assistance in removing the blood from the bronchi, but this is now recognized as being an extremely hurtful teaching, and the first attention should be directed towards suppressing coughing, and for this purpose morphine is the chief remedy. When the hæmorrhage is only moderately severe, nothing further need be given to the patient than morphine; but when, as occurs in many cases, the hæmorrhage does not spontaneously cease, then other remedies have to be given.

The author at first calls attention to the remedies which ought not to be given, remedies which have been frequently recommended, and which yet may produce most disastrous effects. First of all in this connection is the sesquichloride of iron. When given internally, even if it is absorbed, which is extremely doubtful, it must form other combinations, and then will only produce the action of any other iron preparation which evidently would lead to an increase of the bleeding; and it is an old rule, but a good one, that individuals with a hæmorrhagic tendency must be very cautious in the use of iron preparations. The same remarks apply to tannic acid and alum. These remedies only serve to constrict the blood-vessels when applied in dilute solutions. So, also, inhalations of all kinds should be strictly prohibited on account of the more vigorous respiration which this mode of treatment entails, and the consequent danger of increasing the hæmorrhage instead of diminishing it. When, however, a violent hæmoptysis is to be treated, two substances are named, which may be of great service. The first of these is ergotin, which acts on the unstriped muscular fibre of the blood-vessels, and which may be given both internally and subcutaneously; the second remedy is the acetate of lead, which may be given in doses of from one-half to three-quarters of a grain. There is still another remedy which might be

[1] Therapeutic Gazette, June 15.

employed with some prospect of success, although Nothnagel states that he has as yet had no experience with it, and that is *hydrastis canadensis*. Atropine also, in subcutaneous injections of one sixty-fourth of a grain, has likewise been claimed to do good. As to the use of common salt, given in teaspoonful doses, it is not clear as to whether the arrest of hæmorrhages, so frequently reported to follow its employment, are coincidences or consequences of the treatment. At any rate, it can do no harm, and may do good, when nothing else is obtainable. As regards the application of cold externally, he is very doubtful as to its value.

Finally, Nothnagel alludes to the heroic measure of bleeding from a vein to arrest hæmorrhage from the lungs, a proposition based upon the observation that a violent hæmorrhage in leading to syncope often causes the arrest of bleeding. Of course, such a procedure as bleeding for a hæmorrhage from the lungs, can be dismissed without discussion.

THERAPEUTIC NOTES.

TREATMENT OF GONORRHŒAL RHEUMATISM. — In a discussion on this subject at a meeting of the Paris Société de Dermatologie et Syphiligraphie on May 14th, M. Jullien said that, having regard to the infectious origin of the disease, he had for the last five years systematically treated it with subcutaneous injections of bichloride of mercury with extremely satisfactory results. M. E. Besnier pointed out that joint inflammations of gonorrhœal origin often spontaneously undergo rapid modifications, which made it very difficult to judge of the effect of particular remedies. In his experience local treatment was the most important therapeutic factor in such cases, and he placed most reliance on the method recommended by M. Lucas-Championnière, which consisted in touching the parts in a number of places with the point of the cautery, and then wrapping the joint in Vigo's mercurial plaster with cotton-wool dressing afterwards. M. du Castel said he had tried mercurial friction in one case without result, while in another case, in which, however, the inflammation was less severe, it had done a great deal of good.

CARBOLATE OF CAMPHOR. — This preparation is made [1] by adding one part, by weight, of carbolic acid to three parts of camphor, setting aside for twenty-four hours, and straining through gauze. It is a permanent liquid, with a specific gravity of 990. It is thoroughly antiseptic, and possesses unsurpassed germicidal powers. It may be locally applied to wounds, by means of cotton or gauze. When placed under the skin it produces anæsthesia of the surrounding parts, which lasts for several hours. There is some soreness, but no abscess results. The slight smarting felt at first, shortly disappears. For hypodermic use, a little ether or pure alcohol should be added to the liquid. It combines readily with alcohol, ether, fixed and essential oils and petroleum derivatives, but *not* with aqueous solutions or glycerine. It readily dissolves menthol, cocaine, salicylic acid, chloral hydrate, iodoform and corrosive sublimate.

ANTISEPTIC GAUZE — For plugging the uterus, Bar [2] has employed with advantage a gauze medicated with retinol iodoform. It is used as follows: The gauze, after being boiled in strong carbolized water and well dried, is dipped in the following mixture,

℞ Retinol . . . . . 3 ii.
Wax . . . . . 3 iss.
Iodoform . . . . . 3 i. M.

Tampons made with gauze, prepared in this manner, are especially useful, inasmuch as they are apt to leave a good coating of iodoform upon the vaginal or cervical surface, and thus assure complete asepsis of the mucous membrane.

NEW PROCEDURE IN ABSCESS TREATMENT. — The treatment of chronic or cold abscess by the method of aspiration and injection of antiseptic solutions, such as iodoform dissolved in ether, is a favorite plan of some French surgeons,[3] Dr. Piéchaud of Bordeaux, has adapted the method with success to the treatment of acute inflammatory abscesses. Instead of a free incision of the most dependent part he aspirates the abscess, after which he injects a solution of 1 in 1000 of corrosive sublimate. For the past ten months he has invariably adopted this method with marked success. Even if the skin over the seat of the abscess be thinned and undermined, this is no bar to the procedure, for which he claims as advantages that it is less painful, leads to more rapid healing, and leaves no traces of scar.

BROMOFORM IN WHOOPING-COUGH. — Nauwelœrs [4] uses this drug in the following formula:

℞ Bromoform . . . . . gtts. xx.
Alcohol . . . . . 3 iiss.
Sol. gum trag. } . . . . . aa 3 ii. M.
Syr. tolu. }
Sig. One teaspoonful every hour.

The mixture should be well shaken before administration, and should be kept in a well-corked bottle. In adults, Nauwelœrs gives the drug in capsules, each containing seven minims of bromoform. He gives the patient 14 capsules during two or three days. In children the dose should vary with the intensity of the attack and the strength of the child. At first 8–10 drops daily is usually a sufficient dose, but in a few days this may be increased to 20 drops, if found necessary.

[1] Therapeutic Gazette, February, 1891.
[2] La Pratique Médicale, February 17, 1891.
[3] Lancet, April 18th.
[4] Medical and Surgical Reporter, June 27th.

METEOROLOGICAL RECORD,

For the week ending June 27, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...21	29.94	62	67	58	89	92	90	N.	E.	4	6	O.	O.	
M..22	29.82	62	65	60	100	97	98	E.	N.W.	12	8	R.	O.	1.39
T..23	29.78	68	78	58	86	56	71	N.E.	W.	5	11	O.	C.	
W.24	29.88	68	74	62	60	65	62	N.W.	N.W.	20	14	C.	F.	
T..25	29.89	66	74	57	70	69	70	N.W.	S.E.	8	11	C.	C.	
F..26	29.82	66	71	61	73	81	80	E.	E.	6	3	F.	O.	
S..27	29.79	60	65	55	61	64	63	N.W.	N.W.	18	12	O.	O.	†
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JUNE 27, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Scarlet fever.	Diphtheria and croup.
New York	1,515,301	803	416	27.00	8.40	16.32	2.88	3.00
Chicago	1,099,850	—	—	—	—	—	—	—
Philadelphia	1,046,964	430	213	25.53	8.97	54.25	.23	3.68
Brooklyn	806,343	465	276	34.54	6.82	22.66	1.98	4.18
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	150	54	9 24	19 14	3.30	—	2.64
Baltimore	434,439	181	90	25.85	9.35	20.35	1.10	1.65
Cincinnati	296,908	133	56	26.25	7.50	18.00	—	1.93
Cleveland	262,000	74	36	20.25	10.80	13.50	—	2.70
Pittsburg	240,000	—	—	—	—	—	—	—
Milwaukee	240,000	71	38	12.69	11.28	1.41	1.41	7.05
Washington	230,392	170	96	42.34	9.86	35.96	—	2.90
Nashville	76,168	42	20	38.08	4.76	33.33	—	—
Charleston	65,165	51	25	17.64	15.68	11.76	—	—
Portland	36,425	2	0	50.00	50.00	—	—	50.00
Worcester	84,675	16	11	25.00	—	12.50	—	—
Lowell	77,696	28	16	32.13	10.71	28.56	—	3.57
Fall River	74,398	32	15	21.91	12.52	21.91	—	—
Cambridge	70,028	17	9	23.52	11.76	23.52	—	—
Lynn	55,727	18	5	11.11	5.55	11 11	—	—
Lawrence	44,654	13	4	30.76	23.07	23.07	—	—
Springfield	44,179	13	3	23.07	—	23.07	—	—
New Bedford	40,733	10	4	20.00	10.00	10.00	10.00	—
Salem	38,801	9	4	11.11	—	11.11	—	—
Chelsea	27,909	11	7	18.18	—	—	—	—
Haverhill	27,412	10	9	70.00	—	40.00	—	20.00
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	2	0	—	—	—	—	—
Gloucester	24,651	8	0	—	12.50	—	—	—
Newton	24,379	4	0	—	—	—	—	—
Malden	23,031	7	1	28.56	14.28	—	—	—
Fitchburg	22,037	3	0	—	33.33	—	—	—
Waltham	18,707	5	1	—	—	—	—	—
Pittsfield	17,281	4	3	25.00	25.00	—	—	—
Quincy	16,723	6	2	16.66	—	—	—	—
Newburyport	13,947	5	3	20.00	—	—	—	20.00
Medford	11,079	1	0	—	—	—	—	—
Clinton	10,424	2	0	—	—	—	—	—
Hyde Park	10,193	4	0	—	25.00	—	—	—
Peabody	10,158	0	0	—	—	—	—	—

Deaths reported 2,800: under five years of age 1,417; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 760, consumption 254, acute lung diseases 230, diarrhœal diseases 508, diphtheria and croup 89, scarlet fever 38, typhoid fever 35, measles 33, whooping-cough 19, erysipelas 14, cerebro-spinal meningitis 14, malarial fever 10.

From typhoid fever Philadelphia 15, New York 7, Brooklyn 3, Boston, Baltimore, Cincinnati, Milwaukee, Washington, Nashville and Lawrence 1 each. From measles New York 20, Brooklyn 6, Boston, Milwaukee, Washington, Haverhill and Clinton 1 each. From whooping-cough Brooklyn 6, New York 5, Baltimore 3, Washington 2, Philadelphia, Boston and Nashville 1 each. From erysipelas New York 6, Philadelphia 3, Brooklyn 2, Boston, Cleveland and Chelsea 1 each. From cerebro-spinal meningitis Brooklyn 4, Washington, Worcester and Malden 2 each, Boston, Baltimore, Cleveland and Quincy 1 each. From malarial fever Brooklyn 5, Charleston 3, New York 2.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending June 13th, the death-rate was 23.8. Deaths reported 4,293: acute diseases of the respiratory organs (London) 453, whooping-cough 118, measles 77, diarrhœa 35, diphtheria 34, fever 26, scarlet fever 22, small-pox (London) one.

The death-rates ranged from 14.0 in Brighton to 37.6 in Blackburn, Birmingham 30.9, Huddersfield 21.8, Hull 17.6, Leeds 19.4, Leicester 21.2, Liverpool 31.4, London 23.3, Manchester 29.1, Nottingham 27.0, Sheffield 22.9, Sunderland 22.6.

In Edinburgh 24.9, Glasgow 25.4, Dublin 27.0.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending June 20th, the death-rate was 23.1. Deaths reported 4,161: acute diseases of the respective organs (London) 433, whooping-cough 111, measles 59, diarrhœa 43, scarlet fever 38, fever 37, diphtheria 36, small-pox (London) one.

The death-rates ranged from 14.2 in Plymouth to 30.9 in Wolverhampton; Birmingham 26.9, Bradford 20.4, Hull 19.2, Leeds 15.4, Leicester 22.3, Liverpool 29.3, London 23.0, Manchester 29.0, Nottingham 20.0, Sheffield 21.3, Sunderland 17.9. In Edinburgh 20.7, Glasgow 25.3, Dublin 25.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JUNE 27, 1891, TO JULY 3, 1891.

Leave of absence for one month is granted Assistant Surgeon C. B. EWING, U. S. Army.

Upon the abandonment of Fort Davis, Tex., Assistant Surgeon J. O. SKINNER, U. S. Army, will proceed to Fort Clark, Tex., and there take station.

Assistant Surgeon EDWARD C. CARTER relieved from duty at Fort Walla Walla, Wash., and assigned to duty at Fort Canby, Wash.

DEATHS.

ALFRED C. GARRATT, M.D., M.M.S.S., died in Boston, June 30th, aged seventy-eight. He graduated from the Berkshire Medical College, in 1844. He published a book on Medical Electricity, in 1859, and was the author of other works.

HENRY GAWEN SUTTON, M.B., F.R.C.P., Physician and Lecturer on Pathology at the London Hospital, died June 9th, aged fifty-five. He was one of the best known and popular teachers in London, and his work at the London Hospital, with which he had been connected since 1867, was of great scientific and practical value.

BOOKS AND PAMPHLETS RECEIVED.

Medical Publications. Harvard Medical School. 1890.

Studien über graphische Zeitregistrieung. Von Dr. A. Jaquet. Reprint. Basel, 1891.

Gunshot Wounds of the Abdomen. By Aug. Schachner, M.D., Louisville. Reprint, 1890.

"Joe Brown," Doctor, on Alcoholism, its Cause and Cure. New York: E. Scott. 1891.

Kali Chloricum, Lecture. By Charles S. Mack, M.D., Ann Arbor, Mich. Reprint. 1891.

Eleventh Annual Announcement of the University Medical College, Kansas City, Mo. 1891.

Points on the Treatment of Epilepsy. By S. Grover Burnett, A.M., M.D., Kansas City, Mo. Reprint. 1890.

The Diagnosis of Incipient Melancholia. By S. Grover Burnett, A.M., M.D., Kansas City, Mo. Reprint 1891.

Acid Bichloride of Mercury as an Antiseptic: Its Application to Surgical Practice. By Ernest Laplace, M.D. Reprint. 1890.

A Text Book of Physiology. By M. Foster, M.A., M.D., LL.D., F.R.S. Fifth Edition Part IV. London: Macmillan & Co. 1891.

Report for the year 1890-91, presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

A Case of Impacted Gall-Stone, with Abscess Formation, Cholecystotomy, Recovery. By John W. Perkins, M.D., M.M.S.S., Kansas City, Mo.

Exophthalmic Goitre with Mental Disease; reports of three cases with rare complications. By Dr. Charles M. Hay, Philadelphia. Reprint. 1891.

Les Fonctions du Cerveau. Doctrines de l'Ecole de Strasbourg—Doctrines de l'Ecole Italienne. Par Jules Sowry. Paris: Publications du Progres Medical. 1891.

Insomnia and its Therapeutics. By A. W. MacFarlane, M.D., Fellow of the Royal College of Physicians, Edinburgh, etc. New York: William Wood & Co. 1891.

Ueber die Anwendung eintrocknender Linimente (Linimenta exsiccantia) bei der Behandlung von Hautkrankheiten.) Von Prof. F. J. Pick in Prag. Reprint. 1891.

Pathologie et Traitement des Maladies de la Peau. Par le Professeur Moritz Kaposi. Traduction par MM. Ernest Besnier et Adrien Doyon. Paris: G. Masson. 1891.

The Genuine Works of Hippocrates, translated from the Greek, with a Preliminary Discourse and Annotations, by Francis Adams, LL.D., Surgeon. Octavo, 766 pages. New York: William Wood & Co.

Report of the Committee on the Cause and Prevention of Diphtheria Presented at the Eighteenth Annual Meeting of the American Public Health Association, Charleston, S. C., December 16-19, 1890. Reprint. 1891.

The Use of Segmented Rubber Rings in Intestinal Anastomotic and Other Operations. New Methods of Performing Pylorectomy, with Remarks upon Intestinal Anastomotic Operations. A Unique Case of Stab Wound of Thorax and Abdomen; Recovery. A New Intestinal Clamp. Extirpation of the Kidney for an Enormous Myxo-Sarcoma in a Child aged Three Years and Eight Months. By A. V. L. Brokaw, M.D., St. Louis. Reprints. 1889-91.

Lecture.

NEURASTHENIA AND ITS MENTAL SYMPTOMS.[1]

THE SHATTUCK LECTURE FOR 1891.

BY EDWARD COWLES, M.D., SOMERVILLE.

MR. PRESIDENT AND FELLOWS OF THE MASSACHUSETTS MEDICAL SOCIETY: — The founder of the Shattuck Lectureship, whose memory is revered for his good works, and his loyalty to medicine and the welfare of this Commonwealth, has provided for special attention to the study of "diseases of its inhabitants," or "such other subjects" as this Society may select. Your Committee, in appointing me to the responsible duty of fulfilling its trust, has done me a great honor; I wish to express my high appreciation of it, and of the privilege of now addressing you. With the foregoing indications as to my subject I find that in New England there is probably no disease more prevalent than neurasthenia. It was the thesis of Beard, — to whom the world so largely owes the formulation of the accepted ideas of nervous exhaustion under the name given to it by him, — that it was mainly an "American disease." He believed that the chief and primary cause of its development and increase was "modern civilization," and that it had its "rise and growth" and highest expression, in the Northern and Eastern parts of our country. For the present occasion we may be permitted to accept these views so far as to find in them a reason for the fitness of this subject, as having a special local interest in this State of Massachusetts.

The subject of this lecture has been chosen with reference to its practical importance for the general physician, whose usefulness so largely and exceptionally lies in preventive medicine. My observations in the treatment of insanity have given me the conviction that in the commonly occurring and typical forms of mental disorder, which are of a functional and curable character, nervous exhaustion always plays an important part, both in the attending conditions and the causation. The treatment of these functional disorders, as far as the measures ordinarily regarded as therapeutic can go, is little else than the treatment of nervous exhaustion; this is the largest and most constant factor in producing the different groups of symptoms in disordered mental activity. Hence the practical usefulness of studying the varied manifestations of debility in nervous function, in its aspects prodromic to mental disturbance, both for the sake of cure of the existing disorder and for the prevention of the graver degree of exhaustion when insanity supervenes. Neurasthenia, according to Strümpell, is certainly one of the most frequent and important of nervous diseases.

History. — The subject to be discussed is neurasthenia with special reference to the significance of its early mental symptoms as affording important indications for diagnosis and preventive treatment. When Beard, in 1868, described under the term neurasthenia a wide range of symptoms of "nervousness," or conditions of nervous exhaustion, he used the term as designating "a chronic functional disease of the nervous system, the basis of which is impoverishment of nervous tissue in excess of repair." When, in 1880 and 1881, he published in his latest works an elaboration of his well-known views, there had been a very general acceptance of the principles they involved; and subsequently many writers have classified neurasthenia as a neurosis, from its having no discoverable anatomical basis, and as signifying "nervous weakness." Beard's attempt to make of neurasthenia a distinct affection has, however, been much questioned. But by his originality and keenness of observation and analysis, he did his part in reducing a great array of data to definite principles, and initiating the wide application that is now being made of them. In respect to their extension and particularly their relation to insanity, a statement here of the position held by the earlier writers will give the key to the present understanding of the subject.

The "deficiency of mental control," "inability to concentrate the intellect on any task," the rapid fatigue from "the exercise of concentration," the "mental irritability" and "hopelessness" were recognized by Beard as notable symptoms. He also observed the fact that "neurasthenia may concentrate itself almost exclusively on the brain — cerebrasthenia — with the symptoms of morbid fears and impulses, depression, insomnia, fulness, headache, impairment of memory, decline in mental force and power of control." But while making many such precise specifications of most characteristic symptoms of melancholia in its milder manifestations he would only admit that neurasthenia sometimes leads to insanity; and that, while many cases of nervous exhaustion, with irritability, great depression, etc., tending downward to melancholia, come to the border line, they do not cross it as a rule, though they may do so in extreme cases. Some cases of melancholia in our asylums, he says, have been neurasthenics, and some are saved from becoming insane; but he claimed neurasthenia to be a "distinct disease," not "exhibiting the enormous defect that is seen in insanity."

The universally accepted principles of the "rest treatment" that have become so well understood since Weir Mitchell's first recommendation of them, in 1875, in a regular and systematic scheme of treatment, need no discussion here. All are familiar with the classical description [2] of his cases of nervous exhaustion and his specification of the essential elements of the treatment: — seclusion, certain forms of diet, rest in bed, massage and electricity. These measures have stood the satisfactory test of experience by their use in proper cases, in promoting "a liberal gain in fat and blood," of which "the gradual increase will be a visible result of the multitudinous changes in digestive, assimilative, and secretive power in which the whole economy inevitably shares." The great importance of the mental element in neurasthenia, and the widening application of the principles and plan of treatment in mental disorders are in fulfilment of Mitchell's own prophetic words that its sphere of usefulness was likely to extend beyond the limits originally set by him. The bodily conditions in insanity were not fully recognized as so largely those of nervous exhaustion as they really are; and Mitchell, Goodell, Playfair and others have held like views on this point. Mitchell wrote, "The true melancholias, which are not merely depression of spirits from loss of all hope of relief, are best left alone as far as this treatment is concerned. The nutritive failures which so often accompany them must be met by other means than rest, seclusion, etc."; and this opinion was believed to be "sustained by some failures" on his part, and by the opinions of others.

[1] Delivered before the Massachusetts Medical Society, June 9, 1891.

[2] Fat and Blood, 4th Ed., 1885, pp. 38-43.

It is interesting to note, however, how largely the plan of treatment was addressed to the mental condition of the patients: — the manner in which their confidence and co-operation was gained, and particularly the seclusion, were for their mental effect. The need to "rest the organs of mind" was noted, and that "it is thought with the friction of worry which injures, and unless we can secure an absence of this it is vain to hope for help by the method" described. It was Playfair's rule that the mode of treatment is "valueless without the cordial submissive assistance of the patient." But we have now been taught by experience the efficacy of these measures even when enforced, in the nervous exhaustion of melancholia and mania. All writers have observed, as did Mitchell, that "many neurasthenic people suffer from any prolonged effort at attention," — also the common loss of mental control. It is this characteristic lessening of the power of voluntary attention that becomes so significant in its diagnostic value, after we have observed its greater weakening in the graver exhaustion of melancholia. The common occurrence in the cases described of a brain hyperæsthesia as mental irritability, the depression of feeling, and despondency, are equally significant and characteristic of mental disorder from nervous weakness.

Hereditary and Acquired Neurasthenia. — The fact of hereditary predisposition was observed by all writers. Beard characterized it as a congenital weak resistance of the nervous system, entailing neurasthenia as a disease, or as constituting a nervous diathesis upon which the disease would be developed under deficient nutrition. But the idea of it as a clinical entity to be differentiated from other nervous and mental disorders has been broadened by some who regard neurasthenia as the primary condition of all nervous degeneracy, — not as itself a neurosis or a psychosis, but as the soil from which these may grow. There are two great groups of these affections, the hereditary and acquired. When inherited there may be organic modifications, permanent embryonic conditions, of the central nervous system as found in idiocy, etc., according to Arndt; or there may simply be a neuropathic predisposition with organic changes as yet undiscoverable, — a constitutional weakness and instability of the nervous system, — and this is hereditary neurasthenia. The form of acquired neurasthenia may occur in the constitutionally strong, and both forms may be due to any nutritional or toxic causes that can initiate a condition of weakness and irritability of the nervous tissue. Upon such a basis of organic and neurasthenic weakness, there may be engendered not only nervous disorders in general, but processes of degeneracy; and there may be like disorders and degeneracy in respect of those nervous functions which we call mental. All diseases being considered not as "entities," but as morbid conditions and processes of which we observe the "symptoms," we may regard neurasthenia as a disease either hereditary or acquired, and as manifested by many mental symptoms.

General Relation to Insanity. — The statement has already been made that in certain forms of insanity the bodily conditions are essentially those of nervous exhaustion. Of the great number of people, who are in neurasthenic conditions, it is true to say that only a certain proportion become insane. But conversely, the proposition may be equally true, that all people of previously sound health and constitutions, who become insane with ordinary functional mental disorders, have their psychoses dependent upon neurasthenic conditions of the organism, whether the nervous power is annulled quickly by shock, or enfeebled more slowly by prolonged stress or other weakening influences. The fundamental condition here is acquired neurasthenia. When it is hereditary there is a plainer dependence thereon of mental symptoms that come more readily in such cases from stress, nutritive failure, etc. Insanity is always weakness from some cause or other, and the group of symptoms in any given case is a matter of the kind and degree of nervous exhaustion. We find the mental symptoms of neurasthenia in insanity, but being emphasized in unequal degrees in the latter condition, their import is more clearly revealed. Thus we may learn from the study of insanity how to understand and treat the lesser manifestations of nervous exhaustion in its earliest stages, as they are commonly seen by the general physician. In the study of the mental conditions having a common etiology, it will be of advantage if in either case the source and genesis of the symptoms can be made clearer. The present endeavor is to make such a contribution to the subject from observations of mental disorders dependent upon neurasthenia. It will first be necessary to consider some of the fundamental principles that must be regarded in the analysis and interpretation of the data of clinical observations.

The Animal Organism a Mechanism. — The animal organism is regarded biologically as a mechanism which is stimulated to action by its environment, and in turn, acts upon it. Underlying all these phenomena is reflex action of the nervous system, and physiologists generally agree to consider every action as aroused by some definite cause or stimulus.[3] The mechanism, as a whole, is regarded as made up of minor mechanisms, when studied by the physiological method which reasons from structure to functional activity, and from activity back to structure. But the physiologist must observe many "activities" for which he can, as yet, only infer corresponding elementary parts in the organism, the relations of which he can only study as they are represented by their activities. This is peculiarly true of the mental mechanism and its activities, such as attention and memory. We have to assume that every manifestation of mind is correlated to a definite mode and sphere of brain activity; and we can conceive it as constituting a mental mechanism. We can conceive also all the systems and organs of the body as so many co-ordinated mechanisms, — as the muscular, circulatory, and digestive mechanism, etc. The nervous system as a mechanism, made up of many local adaptations to structure and function, presents a like variety of minor mechanisms, with peripheral and central elements of co-ordinated ganglia, nerve-fibres, and nerve-endings. Any one of these minor nervous mechanisms may become neurasthenic from excessive or irregular exercise of its functional activity; the end-organs of the special senses, and any part of the peripheral or central sensory apparatus may become separately fatigued, — allowance being made for the resistance to fatigue of conducting nerve-fibres.[4] The same is true of the nervous elements of the motor mechanisms. All the inhibitory mechanisms, and particularly, in the sympathetic system, neurasthenic conditions of the inhibitory vaso-motor

[3] Sedgwick: Art. Reflex Actions, Ref. Hand Book of Med. Sciences.
[4] Bowditch: Jour. of Physiol., vol. vi, p. 133.

centres are especially important in the causation of both local and general disorders. The metabolic processes in general may suffer from central weakness of innervation and control; and there may be neurasthenia of such special organs as the heart, stomach, and liver. Thus there are many forms and degrees of the phenomena of nervous exhaustion classified under the divisions of cerebral, spinal, or general neurasthenia; and hence neurasthenia has been defined by Ziemssen [6] as "a functional weakness of the nervous system, varying from the slightest degree in single localities to entire loss of strength in the whole nervous system." But though the symptoms vary greatly according to the functions of the part affected, we are always led back to one principle:— the weakness of the nervous system from some cause, whatever it may be.

The physiological basis of these phenomena is the principle of the storage and discharge of energy of muscle and nerve. This accords with the biological theory that all function is due to chemical changes taking place within the organism, and that the functional activity of a specialized tissue depends primarily upon these changes in the individual cells. The fundamental idea is, that in the resting state the cell elaborates highly complex compounds, and that these break down to yield the energy by which the cell does its work.

Importance of Physiology and Chemistry. — Such being the character of the organic mechanism the difficulties have been very great in gaining an understanding of these affections. Writers have dwelt chiefly upon the facts, clinically observed, of the expenditure of nerve-force and "the waste of nerve-tissue in excess of repair"; and emphasis has been laid mainly upon the nutritional elements of the problem. But while they have recognized the necessity of treating the mental conditions upon which they made clinical observations, the larger import of these mental symptoms has escaped full appreciation. Moreover, in the search for lesions explanatory of the most marked disturbances of function, anatomy and pathology are as yet disappointing. Physiology offers greater aid, and by the new laboratory methods not only bodily but mental activities may be studied, in advance of our knowledge of the structural mechanisms upon which they depend. Now, newest of all, comes the science of bacteriology with its wonderful revelations, and the new discoveries in organic and physiological chemistry; they promise to throw great light upon these mysteries of our problem.

Two Essential Considerations. — The present status of this problem gives us two important indications: — first, we cannot correctly conceive the existence of a condition that may be called "pure neurasthenia" as a matter of simple weakness from over-use, and inadequate rest and nutrition, but we must make large account of the presence of toxic materials in the tissues as the immediate products of this normal exercise; — and second, we must take into account also the nature and manner of production of the mental symptoms common to neurasthenia and insanity, and their significance and value must be better understood and appreciated. There is time here for only the briefest mention of some of the conclusions reached by the newer investigations in the different branches of this complicated problem; these may serve to indicate the grounds of the arguments in support of the two foregoing propositions.

[6] Neurasthenia. Wood's Monographs, vol. i, 1889, p. 534.

1. *Toxic Elements in Normal and Pathological Fatigue.* — The normal organic mechanism, represented by a healthy adult, may be taken as a standard for observation. When it is stimulated to activity there may be observed the phenomena of use, and of stress from over-exercise. Beginning with the peripheral muscular mechanism, physiology teaches us that fatigue is not the only result of muscular contraction. Noxious products are always yielded as the results of the attendant chemical change in the muscle substance, by the decomposition of certain parts of which, the latent energy is set free and expended in mechanical work. The restoration to the normal state is not alone through rest, and processes of repair by nutrition and the rebuilding of the complex molecular substances of the muscular tissue, but the blood current carries off the immediate waste products, obstructive to function, while it brings new raw material.[8]

Normal Fatigue. — A muscle made to contract repeatedly, whether by electrical stimulation or voluntary effort, will yield regularly lessening contractions until it ceases to respond and is said to be "exhausted." In the case of voluntary contractions there is central fatigue also from the expenditure of energy in mental effort. The difficulty has been to distinguish between the central nervous fatigue, and the peripheral fatigue of muscles; but Mosso[7], Maggiora,[8] Lombard,[9] and others have shown that the "curve of fatigue" is alike in each case. They have demonstrated experimentally in man, that there is an intimate connection between the fatigue of the central nervous system and that of the muscles, — that there is loss of power by exercise in both peripheral and central mechanisms, — and that the effects in each may be studied separately. When certain muscles were experimentally fatigued by long-continued work under both electrical and voluntary stimuli, it was found that other muscles not exercised were also affected and their power lessened, as by a transmitted toxic influence. It was found also that human muscles have an excitability and energy peculiar to themselves, and that they weary independently of the excitability and energy of the nerve-centres. This shows that the muscles are the seat of certain phenomena of fatigue which, thus far, have been thought to arise in the central nervous system and to belong essentially to it. Under prolonged exercise there is lessened sensitiveness as well as diminished power.

In a man subjected to severe mental work, it was found that the muscles, which had been inactive, were weakened by it. The result of such experiments is regarded as going to show that a poisonous material, produced by chemical changes in the brain, enters the circulation, and, acting upon the muscles, weakens them. These demonstrations are also in accordance with the generally accepted physiological principle that the central nervous mechanisms, as do the muscular, undergo a regressive metabolism of tissue upon exercise, and that this is also of an oxidative character with toxic waste products.[10] There is also in nervous centres a like loss of normal excitability with fatigue and exhaustion.

Physiological Shrinkage and Recovery of Cell-con-

[8] Foster: Physiology, 5th English Ed., 1890, pp. 148-152.
[7] Arch. Ital. de Biol., 1890, pp. 123-186.
[8] Ibid. pp. 187-241. See review of both articles, Amer. Jour. Psychol., Vol. iii, pp. 377-381.
[9] Amer. Jour. Psychol., Ibid. p. 24.
[10] Foster. Op. cit., p. 154.

tents. — A further demonstration of the physiological changes in nerve-cells is being made by Hodge,[11] in his experiments begun in 1887, which are of the most significant interest. The electrical stimulation, in frogs and cats, of a nerve going to a spinal ganglion caused, after a number of hours, a marked shrinkage of the nerve-cells, particularly of the nuclei, which lost forty per cent. of their bulk; the cells themselves, though decreased but little in size, showed extreme vacuolation in the cell protoplasm; and the nuclei of the cell capsule shrunk to a noticeable degree. The change in the cells was found to be generally in proportion to the severity and duration of their stimulation. It was shown that in a subsequent resting state the cells recover their normal appearance, but by a slow process. After five hours of severe work and a shrinkage of 48.8 per cent. in the nucleus, recovery required twenty-four hours. In the cells of a worked ganglion there are different degrees of shrinkage of the nuclei, — from five to eighty per cent. of original volume; in the latter the protoplasm was riddled with vacuoles and the nucleus shrunken to a densely staining speck. The spinal ganglia of pigeons and English sparrows, after normal exercise, showed exactly similar changes; — the difference between the condition of the sparrows' cells, when rested in the morning, and fatigued at night, being much more marked, on some occasions, than could be obtained by the most severe electrical stimulation. Sadowski has obtained the organic changes, of neurotic coagulation and vacuoles in central cells, from peripheral stimulation, mechanical and electrical. There can be no doubt that such visible changes are accompanied by chemical reactions also; the worked cells took the staining differently, and it is probable that new granules were formed taking a darker staining. The evidence is important, that all these changes are normal, and correspond with the daily rhythm of rest and activity, — sleep and waking.

These physiological and chemical explanations of the conditions following exercise, are supported by an evident diminution and removal of the substance of the nerve-cells as a normal process. It is shown that the actual expenditure of energy, muscular or nervous, is a factor which has always joined to it a toxic element in the products of the changes normally caused in the tissues by functional activity. There may be local areas of toxic influences hindering or inhibiting the functions of distinct peripheral or central mechanisms; and the blood becoming charged with them more general effects may be produced.

These are the common phenomena of a normal active life, in the daily round, from morning rest, vigor and alertness, to evening fatigue, weakness and heaviness, — both in mind and body. The restoration of normal conditions, with the re-storage of energy, comes through nutrition, furnishing new raw material, — rest, to stop the expenditure of energy and give time for the chemical building up of cell-contents, as well as for the removal of accumulated waste products, — and sleep, to hold in abeyance the general normal irritability, and afford effective repose to all tissues whose activities can be spared from the vegetative life. Unused muscle wastes; when used it grows. The nutrition of a muscle is favorably affected by its functional activity.[12] A wholesome degree of fatigue is normally attendant upon physiological use, through increased blood-supply and reactions promotive of nutrition; this may be characterized as normal fatigue in contradistinction to the more pronounced effects which constitute exhaustion.

(To be continued.)

[11] Am. Jour. of Psychol., May, 1888; May, 1889, and Feb., 1891.
[12] Foster. Op. cit. p. 146.

Original Articles.

METATARSAL NEURALGIA, OR "MORTON'S AFFECTION OF THE FOOT."[1]

BY E. H. BRADFORD, M.D.

THE title "Morton's Affection" could properly be used, as the affection was first thoroughly described by Dr. Thomas G. Morton, of Philadelphia; but a personal name is, as a rule, to be avoided, if possible, in defining a disease, and it is for this reason that the term "metatarsal neuralgia," has been preferred. The disease consists of a form of neuralgia of the foot, quite clearly marked in its symptoms and often exceedingly distressing. The affection is not an uncommon one, but has hitherto attracted but little attention.

It is somewhat singular that an affection which is not infrequent, in these days of thorough investigation of all ailments, should have attracted but little attention either in the researches of surgeons or of neurologists. The cases are usually classed among the ill-defined hysterical or nervous affections, and not thoroughly investigated; or they are deemed to be gouty, as in the minds of many practitioners are frequently all painful affections of the toes.

The pain is situated at the base of the fourth toe, and often, in severe cases, radiates up the leg. It may be of a dull character, or it may be throbbing and extremely severe. Ordinarily the pain is spasmodic, or is worse at intervals. At times, in some instances, it is so severe as to entirely prevent walking, and the patient has to sit down and rest for a few moments. The pain is usually not severe at night. It is aggravated usually by local pressure over the head of the metatarsal foot, or by squeezing the foot. On inspection of the foot nothing can be observed.

Dr. Thomas B. Morton, in the *American Journal of Medical Sciences*, January, 1876, reported a number of cases, which he classified as a peculiar and painful affection of the fourth metatarso-phalangeal articulation. His attention was first directed to this affection in 1870. Cases of the mild form were reported by him to be bearable; they may, however, develop into the severe form. Attacks of pain, in the mild cases, are followed by periods of complete immunity, but neuralgia reappears again at intervals. In the severer form, cases are so from the commencement, frequently following a sprain or a twist to the anterior portion of the foot. In certain cases the affection appears to be dependent in part on ill-fitting shoes.

Dr. Morton has given an anatomical explanation of the symptoms, which are manifestly due to a neuritis caused by the pinching or bruising of a nerve by the head of the fifth bone. The occurrence is due to the fact that the metatarso-phalangeal joints of the first, second and third toes are found on almost a direct line with each other, while the head of the fourth metatarsal is from one-eighth to one-fourth of an inch behind the

[1] Read at the Meeting of the Surgical Section of the Suffolk District Medical Society, April 1, 1891.

head of the third, and the head of the fifth is from three-eighths to half an inch from the head of the fourth. The joint of the third, therefore, is slightly in advance of the joint of the fourth, and the joint of the fifth is considerably behind the joint of the fourth. The fifth metatarsal joint is so much posterior to the fourth that the base of the first phalanx of the little toe is brought on a line with the head and neck of the fourth metatarsal, the head of the fifth metatarsal being opposed to the neck of the fourth. There is very slight lateral motion to the first three metatarsal bones. The fourth has greater mobility, the fifth still more than the fourth, and in this respect it resembles the fifth metacarpal. Lateral pressure brings the head of the fifth metatarsal and the little toe into direct contact with the base of the first phalanx and the head and neck of the fourth; to some extent the extremity of the fifth metatarsal rolls above and under this bone. The branches of the external phalangeal nerve are fully distributed to the little toe and the outside of the fourth. There are numerous branches of this nerve equally lodged in between these toes, and they are liable not only to be unduly compressed, but pinched by a sudden twist of the anterior part of the foot. Any foot movement which suddenly may displace the toes when confined in the shoe may induce an attack of this neuralgia. In some cases no abnormality or other specific cause for the disease has been detected.

The most clear description of the symptoms of the affection is one furnished to Dr. Morton by a physician who had suffered from this affection for some time. The gentleman's first attack occurred during his boyhood, and was produced by the tight lacing of skate straps. On unbuckling the straps the cramp was at first soon relieved, and it was thought nothing of. But on a continuation of this system of squeezing by tight straps and tight boots, and riding for hours on horseback with the flexors of the leg and foot in violent action, and the toes turned in, the attacks became more frequent, more painful, and the abnormal condition of the parts more chronic. The causes determining the accession of the paroxysm were the wearing of a badly-fitting boot, especially if the sole was narrow; a long and fatiguing walk, particularly on a hot day over a hot pavement; a long ride on horseback; a wet boot sticking to the sock; a wet sock sticking to the toes; long continued flexion of the knee-joint, as in a railroad car, carriage or lecture-room; treading on an uneven surface, as a cobble pavement; and if the nervous system be depressed from any cause, these exciting causes would act more powerfully. Symptoms of an attack were most intense pain, with increase of torture on the use of the boot-jack; and with all this no redness, no swelling, no abrasion of the skin, no callosity, no visible displacement of the bone, at least after removal of the boot. The suddenness of the attack was noteworthy. The patient was often obliged to remove his boot, sometimes in company, sometimes in his carriage; he has been obliged to sit down on a curbstone and remove the boot; he has dismounted from his horse and sent home for slippers; he has tied his horse to a tree and lain on the ground, unable to ride farther. All tight boots did not cause an attack, and some tight boots were favorities, because they would not let "the toe out of joint." The remedies which gave relief were the removal of the boot, the manipulating of the toes, straightening them out. When inconvenient to take off the boot, he found that grasping the foot tightly round the metatarsal region would answer, and sometimes a circlet of india-rubber band, binding the foot round the instep. Putting on a dry boot and dry stocking was of great benefit, and the boot should be well sprinkled with powdered soapstone before putting it on. Frequently an attack has been relieved completely without other means than rest and a cup of strong tea.[2]

Symptoms vary to an extent but the above description will serve as a type for a number of cases.

The frequency of the affection in women rather than men was observed by Dr. Morton, and attributed, not only to the greater delicacy and pliability of the foot as compared with that of men, but also in a measure to the custom of wearing tight shoes. Of 15 cases, 13 were in women and two were in males. All of the patients were those who were accustomed to the luxuries of life.

Dr. Erskine Mason, of New York, reported a case of metatarsal neuralgia of the joint to the second toe, and Dr. Morton has seen a few cases in the joint of the third toe. Dr. Morton found, on inquiry among shoe dealers, that the peculiar condition has not infrequently been seen by them; but singularly it is not a case of disability among soldiers, on the authority of Dr. Billings.

Somewhat similar symptoms are described by Dr. Auguste Pollosson, of Lyons, though hitherto unrecognized as belonging to a distinct affection, he believes, anterior metatarsalgia, as he terms it, has a very real existence, being capable of putting a patient who has the misfortune to be its subject to a good deal of serious distress and inconvenience. He describes an instance in which a medical man, twenty-nine years of age, has suffered from this affection for some years. It gives no trouble when the foot is at rest and without a shoe, but it is usually brought on by wearing boots and by walking a good deal. It is much more likely to occur when going down than when going up hill. The pain comes on suddenly, a feeling of something having given way in the foot accompanying the onset, together with a kind of grating sensation. After this the patient walks lame, for all pressure of the anterior part of the sole of the foot on the ground is very painful. If walking is persisted in, the pain increases, until in a few minutes it attains its maximum, rendering all further attempts at locomotion absolutely impossible. The symptoms can be removed by taking off the boot and squeezing the forepart of the foot, especially if the heads of the middle metatarsals are at the same time pressed upwards by the finger. When this is done a kind of grating is again felt, together with a sharp twinge of pain, but almost immediately afterward the pain entirely ceases. The cause of the affection is evidently a certain laxity of the transverse metatarsal ligament, which permits a partial infraction of the arch formed by the heads of the five metatarsals, one of the middle ones, probably the third, becoming dislocated downwards and compressing the nerves running along each side of it against the heads of the neighboring bones. Dr. Pollosson mentions a somewhat analogous case, where a young growing girl suffered from a hammer toe from a similar laxity of the metatarsal ligaments.[3]

[2] In addition to this clear statement of the affection by Dr. Morton, see the *American Journal of Medical Sciences*, 1876; the "Surgical Report of the Pennsylvania Hospital," 1880, p. 109; and the Philadelphia *Medical Times*, October 2, 1886.

[3] London Lancet, March 2, 1889, p. 436.

Dr. Pollosson reported some relief from the use of a soft pad worn in the sole of the boot.[4]

A few English writers, commenting on the paper of Dr. Pollosson, have reported experience similar to his, and seem to regard the affection as due to the sinking of the plantar arch.

The affection may be similar simply in the symptoms of neuralgic pain, but different as to causation; or "anterior metatarsalgia may be another name of the affection first described by Dr. Morton, the difference between the two writers as to the pathology being one due to the difficulty of obtaining anatomical proof in the cases afflicted.

As but little has been written on the subject, evidence confirmatory of Dr. Morton's observation will be of use; and for this purpose the following cases are reported by the writer.

The symptoms presented exactly correspond to those mentioned in Dr. Morton's cases, except that in those that have come under the writer's observation, the symptoms were not the result of an accident or the twisting of the foot, but were of the idiopathic and chronic type.

Of the 16 cases, 13 were in women; four were nurses; one a female book-keeper, obliged to stand all day. One of the men was large and of heavy build. The patients were all persons enjoying health; in none was there any evidence of gout or rheumatism.

In the cases which have come under my observation the results of treatment, as well as the symptoms and localization of the severest point of pain, would appear to confirm the view of Dr. Morton, to the effect that the symptoms are due to a pinching of the metatarsal nerve rather than to a "flattening of the tarsal arch." The pain was essentially neuralgic in character, and in all cases relieved if the boot was removed, although the patient stood upon the floor on the bared foot, and without support to the tarsal arch. In none of the cases was there flat-foot present.

CASE I. Miss F., accountant, age twenty-eight. Is obliged to stand all day. Person of excellent health, but for several years has suffered acutely from pain in her right foot, radiating from the base of the fourth toe. This is at times intolerable, so that she is obliged to remove her shoe, and when new shoes are worn the pain becomes intense. Some shoes she becomes accustomed to, and others it is impossible for her to use. Her shoes are made with great care, but she has a certain amount of pain at all times, at some times such an amount of neuralgia as to make her willing to submit to any operation for relief. Is unable to tell what shoes may help her, and new shoes are always uncomfortable; some old shoes she can wear for a while. She has at times been obliged to sit down in the street and rest for a short time until the attack has passed over. She is never entirely free from pain. Under proper treatment she was relieved from her attacks of pain, and she has been able to continue her work with properly constructed shoes.

CASE II. Woman, age thirty-five, referred to me by the kindness of Dr. Wellington. After tedious confinement the patient found great difficulty in using the left foot on account of extreme pain in the region of the head of the fourth metatarsal. This pain was aggravated by a local pressure and by squeezing the foot, the pressure of any shoe was at times insupportable. No swelling or redness could be found upon the foot. Locomotion was impossible at times. Condition had remained the same for about three months, at times patient being slightly better and relapsing again. The patient had been treated by complete rest of the foot for awhile, but the pain had always returned. Anti-neuralgic remedies had been used. Under appropriate treatment the patient recovered and was heard from several years later as having remained entirely well.

The symptoms in the remaining cases are so much the same that relation of the cases is practically a repetition. They can be briefly summarized as follows:

CASE III. Professional nurse, female, age twenty-five. Treatment imperfectly carried out. Eventual improvement. Case watched for four years.

CASE IV. Nurse, age thirty. Treatment imperfect. Patient gradually improved. Case watched for three years.

CASE V. Nursing Sister of Charity, age twenty-three. Treatment thoroughly carried out with satisfactory recovery. Case watched for one year.

CASE VI. Lady, forty years of age, recovery, but needed carefully made shoes for several years. Case watched for three years.

CASE VII. Lady, forty-five years of age, not treated.

CASE VIII. Lady, twenty-five years of age, of delicate health. A satisfactory result, but needed to have her boots carefully made. Case watched for two years.

CASE IX. Female physician, forty years of age. Satisfactory result followed treatment. Case watched for two months.

CASE X. Professional nurse, thirty years of age. Treatment not attempted.

In three instances the symptoms were observed in men, in one, a gentleman of fifty, of sedentary habits. In addition to the ordinary symptoms there was at times a sensation of twitching of the toe. In another, a priest, a man of slight figure. In a third the patient was a lawyer by profession, thirty years of age, but unusually large and heavy. In none of these was treatment carried out and the results are not known.

In the case of a lady of thirty-five, the pain was not located at the head of the fourth metatarsal, but at that of the second metatarsal. The pain was aggravated by pressure on the dorsum of the foot.

In the case of a delicate woman of twenty-five there was for a time, in addition to the usual symptoms, some swelling, apparently due to a tenosynovitis of the tendon of the fourth toe. The patient required the use of a crutch for two months, and later for three months, a Thomas metatarsal shoe (that is, a shoe raised at the middle of the sole in a way similar to that applied ordinarily at the heel, thus avoiding any strain at the metatarso-phalangeal joint). The patient eventually recovered. The case was seen one year later and the foot had remained in a satisfactory condition.

The treatment for this affection which has been considered necessary in the majority of cases, by Dr. Morton, is the excision of the head of the fourth metatarsal bone and of such a portion of the shaft as may be necessary to prevent pinching the branches of the external plantar nerve. He reports a number of cases where a cure has been effected in this way. The

[4] Lancet, vol. i, 1889, pp. 533, 707; also New York Medical Record, March 30, 1889, p. 355.

treatment mentioned by Dr. Pollosson is, as he states, only partially successful, and consists in the wearing of a rubber pad sole of the shoe. In some of the milder cases Dr. Morton has found success by rest, temporarily bandaging the foot so as to steady the metatarsal bone and prevent its rubbing and pinching the nerve, and the subsequent use of properly constructed shoes.

The cases which have fallen under my observation were all but two of the subacute and chronic type, and did not require operative treatment. In two, where the symptoms were fairly severe, the patients were willing to devote much time, including the use of crutches for awhile, for the sake of perfecting a cure by conservative means, and avoiding an operation, and the result was eventually successful, although in one instance several months' treatment was needed.

The treatment which I have employed in all these cases has been directed to prevent any lateral pressure on the foot. Taking it for granted that the irritated condition is, as Dr. Morton describes, due entirely to the irritation of the nerve by the pressure of the head of the metatarsal upon the nerve, and that this condition would be relieved if the patient walked about without shoes or stockings, I have endeavored, as far as was practicable, to reproduce the barefooted condition. In the extremely sensitive state, I have advised people to keep the foot up, and have used simple remedies to relieve the sensitiveness, such as oleate of atropia or oleate of morphia. I have advised them to use locally such measures as would stimulate the circulation, such as the use of hot and cold water alternately, either by plunging or by showering the foot; the inunction of oleate of atropia and the injection of cocaine; these and rest have been employed until the stage of extreme irritability has passed. The patients have then been allowed to walk about readily, using on their feet either crocheted slippers with digitated stockings, or else stockings split so as to prevent crowding at the toes; and, if the patient walks out doors, the use of moccasins or overshoes; so that, as far as possible, the foot may be in precisely the condition it would be if entirely uncovered. In severe cases crutches have been used for a time. After this state of affairs has lasted for a week or so — in some instances a month — shoes are constructed for the patient by a shoemaker who has been carefully instructed that there should be no lateral pressure. A shoe made to carry this idea out must necessarily be an extremely uncomely one. While there should be sufficient pressure over the instep to prevent the foot from sliding forward, and the toes striking the end of the shoe — front of the shoe — the rest of the foot must be very broad and loose, so that there shall be literally no pressure as far as is practicable. With these measures I have been able in a large majority of cases, after three or four weeks' treatment, to prevent any recurrence of pain, and to make the patients able to go about freely. In some instances the patients have entirely recovered; in a few instances the patients require to wear peculiarly constructed shoe; and in one instance a Thomas metatarsal shoe was needed for awhile; and in some instances the benefit has been but temporary as far as complete relief; but the relief has been sufficient to determine the patient that an operation would not be necessary.

One of the males was an extremely large man, so that the amount of pressure upon the foot was great. In the youngest patient the weight of the person was comparatively slight, — not more than 112 pounds. In one of them the patient had worn pointed shoes and cramped the foot. In others, the boots were no more pointed than is ordinarily seen in women's shoes.

Some difficulty will be met in procuring properly constructed shoes, as not only are the patients themselves sometimes unwilling to wear unsightly shoes continuously, but shoemakers are invariably inclined to shape the last to a conventional rather than an anatomical shaped foot, but by constant supervision it is possible to have a satisfactory shoe made which is not unsightly. The shoe which is to be worn in the first stage of the convalescence should be looser than that required in the later; and after a complete immunity from pressure for some time, — six months or a year, — the patient is able to wear ordinary shoes, or shoes approaching those customarily made. As a rule, thin-soled boots like slippers are not so comfortable in the acute stage of the affection, as the heavier soles, provided the latter are of the proper shape, for the reason that they do not splint the foot, so that it is without any proper brace. If, however, the foot is cramped, the thick sole offers no advantage. A shoe like a Chinese slipper would properly be of the most use, as the sole is unyielding and the front of the boot is broad. In some instances it is advisable to use digitated stockings, which give more freedom to the toes; and it is also possible to spread the toes apart by pieces of felt, in that way giving more room to the heads of the metatarsals.

The treatment of the affection, which though distressing is readily recognized, may be briefly summed as — either an operation, or rest, and the use (for a while at least) of unusually broad-soled shoes. In the severest cases operative interference is necessary unless a good deal of time be given to thorough treatment.

PRELIMINARY REPORT ON THE CLINICAL USE OF TUBERCULIN.[1]

BY HAROLD C. ERNST, M.D.,
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(Continued from No. 2, page 28.)

Of the cases classified as "surgical," some certainly do not come under the head of tuberculosis, by reason of any settled method of diagnosis that is at present at our command. For convenience sake, they are, however, placed in the class to which we now come, in order to separate them distinctly from the one that follows, and which includes those cases that can only be considered by themselves, and in most of which there was not even a strong clinical suspicion of the existence of tuberculosis. The cases now to be considered, therefore, form Class II.

SECTION II.

SURGICAL AND LUPUS. — CASES XIII–XXXIV.

Case 13. Boston. Admitted January 3, 1891. Service of Dr. J. C. Warren. Born in Massachusetts, twenty-seven years old, married, housewife. Family history absolutely negative, as far as tuberculosis or lupus are concerned. Had lupus of the larynx in 1878, and nervous prostration in 1883.

Disease began six years ago, with a small red pap-

[1] Read before the Boston Society for Medical Improvement, May 11, 1891.

ule on the tip of the nose. Menstruation good. Children, one. Well developed; fair strength; good nutrition, appetite and sleep; skin normal, except at lesion; urine normal, 1023, no albumen. Six years ago a small red papule appeared on the tip of the nose, gradually extending, but never going down on the alæ. Went to Dr. White and was cured in nine months, so that only a slight cicatrix remained.

In December, 1889, the disease reappeared in the same place, and spread to the lip; and since July, 1890, has attacked the alæ of the nose. The disease is still spreading, and a new papule appeared on the lip a few weeks before entrance.

Examination showed the nose much enlarged at the tip, and covered with exuberant granulations. It has been treated with aristol ointment. The lesion extended nearly to the bridge of the nose, involved both alæ and the septum, and extended to the upper lip, involving about two-thirds of the width and about two inches in length. Outside of the granulating area was a red areola, about one-fourth of an edge in width.

January 3d. Dose .001 gm. Headache; fair sleep; slight nausea. The nose was stiffer, showed increased redness; no increased exudation; mouth and throat dry.

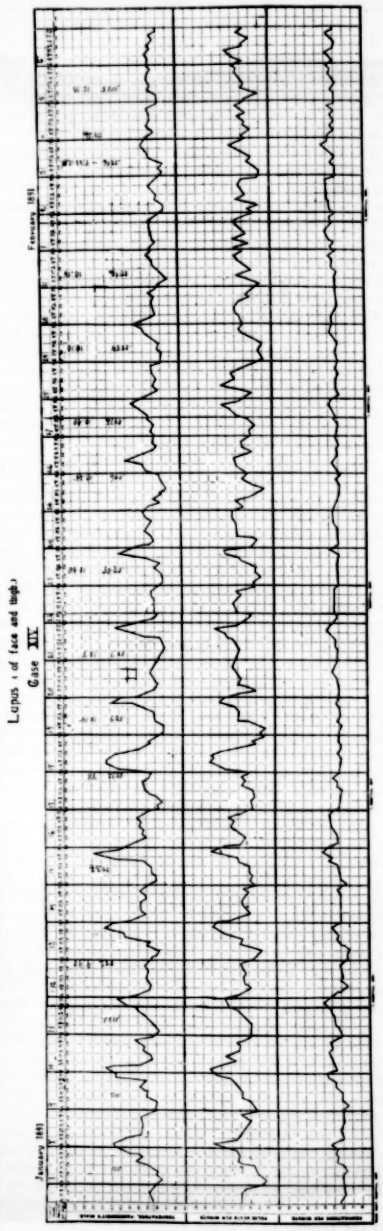
March 30th. Dose, .0048 gm. No reaction following all these. Was sent home for a month.

Summary. — No of injections, 28; amount used, 123.6 mg.; highest dose, 8.4 mg.; highest temperature 101.4°, after the fifth injection of two milligrammes.

April 17th. Condition about the same. Is to go to Dr. White for active treatment. Feels that her general condition has been very much improved. Discharged, not relieved. Patient showed a very marked improvement for the first six weeks of treatment, the lesions diminishing in size and activity. This was not kept up, however, but a rather retrograde process began.

CASE 14. Lives in East Boston. Admitted January 6, 1891. Service of Dr. C. B. Porter. Born in Lawrence, twenty years old, single. No family history obtained. Disease has lasted for thirteen years. No early history of the disease obtained. Previous weight was about one hundred and sixteen pounds. Is well developed; good strength and nutrition, appetite and sleep; pain in the lesions; abdomen negative. Has had the lesions ever since he can remember. They first appeared about the eye, then the upper lip and nose. Three or four years ago the tip of the nose began to disappear. Five months ago a similar process began on the left side of the buttocks, and about the same time upon the third finger of the left hand.

Examination showed the face, below the eye, to have a skin which is red, indurated, crusted, and in many places oozing. The skin is contracted about the mouth, causing the mouth to be an open hole, from which saliva constantly oozes, producing extensive excoriations below the mouth, which are covered with hæmorrhagic crusts. The tip of the nose, including both alæ and a part of the septum, has ulcerated away, The third finger of the left hand showed the same process on the last two phalanges. On the left buttock and thigh is an area, oval in shape, eight inches by six inches, covered, especially at the periphery, with thick, heavy scales and brown crusts. Several portions in the centre show small areas of white unaf-



fected skin. The patient, because of the stiffness of this indurated area, is obliged to walk upon the toe of the left foot. Has had no local treatment for some time, but has been taking some form of patent medicine.

January 1st. Dose, .001 gm. At 6.30 P. M., face was swollen, otherwise was all right. At 9, the face was swollen and hot; oozing from the excoriated parts of the face and mouth was increased. The right eye was partially closed by the swelling. Increased discharge from the thigh. Otherwise improved, but weak, and with diminished appetite next morning.

April 11th. Dose, .012 gm. Treatment was omitted. Thigh shows no crusting, as it is in a quiescent state. Scales are whitish over the face, with active ulcerative spots at the corner of the mouth and corners of the eyes.

Summary.— Number of injections, 41; amount of material used, 363.4 mg.; highest dose, 22.8 mg.

May 1st. Condition about the same. A very slight amount of crusting on edges of the patch on the thigh, and also on the face. General condition good. Desires to continue the treatment. Discharged relieved. A gain in weight and a marked improvement in the condition of the affected area on thigh; not so marked upon the face, which seems to be becoming more active.

Case 15. Boston. Date of admission, October 13, 1890. Service of Dr. Mason. Born in Portugal, twenty-five years old, single, housework. General health fair; irregular menses; well developed; fair strength; good nutrition; poor appetite and poor sleep; skin of a yellowish hue; tongue coated with a thick, pasty, white covering, red edges; heart and circulation negative; temperature 100°; pulse 88; no cough. Troubled with sleeplessness for four weeks. Is constipated.

October 19, 1890. Urine high, acid, 1029, clear, a trace of albumen, some blood, a few vaginal cells, one or two hyaline casts. Abdomen swollen; tympanitic over the upper portion, with dulness in the flanks, and changing with the position. An indistinct fluctuation wave was made out. For four weeks has been troubled with pain and swelling in the abdomen. Ten months ago lifted a heavy tub. Has had pain in the back since which is getting worse. Examination shows slight dulness below the inferior angle of the scapula on the left, and diminished respiration (almost absent). Vocal sounds and fremitus were not obtained. The rest of the chest showed respiration and percussion fair.

January 13, 1891. Physical examination. Bladder contained nineteen ounces. Cervix rather low in the axis of the vagina, fluctuating tumor filling in the right cul-de-sac. After catheterization cervix lower down, and pointed backward. Lateral and posterior cul-de-sacs contain a roughly nodular mass, about the level of the internal os, — a cord-like body, which runs transversely across the surface, — possibly tubercular, apparently adherent to the body, slightly movable, and felt bi-manually. Temperature varied markedly during the past few days.

January 16th. Dose, .0008 gm. General condition poor. No subjective symptoms.

March 12th. Dose, .0042 gm. Patient is undoubtedly improving. Menstruated this week for the first time in months.

March 18th. Temperature has been normal since the last note. Treatment omitted because the patient is suffering from a very severe attack of measles.

Summary. — Number of injections, 23; amount used, 106.8 mg.; highest dose, 10 mg.; highest temperature, 104°, after the fifth injection of three milligrammes. Discharged, relieved.

Up to time of attack of measles, showed a very marked and decided improvement in general condition, together with a gain of nearly ten pounds in weight. The local affection showed no especial alteration.

Case 16. Boston. Admitted February 11, 1891. Service of Dr. C. B. Porter. Age forty, married, ward-tender. Family history good. Disease commenced five months ago with a swelling of small extent on the right side of the neck, gradually increasing. General health fair; appearance well developed; good strength, nutrition, appetite and sleep; no chills, fever or night sweats; temperature 99°; pulse 90; respiration 24. Right side of the neck shows one gland about the size of a hen's egg, lying on the upper part of the stero-mastoid. Three smaller glands are to be made out above this, and several below.

February 10th. Dose, .0006 gm. General discomfort in the afternoon. No change in the temperature, or in the glands.

March 7th. Dose, .0072 gm. No result.

March 10th. Discharged.

Summary. — Number of injections, 11; amount of material used, 48.9 mg.; highest dose 7.5 mg.; highest temperature, 103°, after the tenth injection of 7.5 mg. Discharged, not relieved. No effect was observed upon the tumors.

Case 17. Boston. Admitted July 7, 1890. Service of Dr. Bolles. Born in Ireland thirty-nine years ago, single, laborer. Family history good. Had measles when he was six years old. Commenced November, 1889, from a twist of the knee. General health good; general strength fair; nutrition good; somewhat anæmic; appetite fair; sleep good; heart and circulation negative; stools negative; abdomen negative. Gave the twist to the knee ten months before entrance, accompanied by swelling of the limb. Was operated on by Dr. Cushing, September, 1890.

On December 2d, slight pain and discharge. On the 13th, there was a sinus on the outer edge of the cicatrix. On the 31st, eats and sleeps well. There was a slight discharge from the outer sinus; the one on the inner side is closed.

January 4th. Dose, .001 gm. Headache; pain in the neck; poor appetite and sleep; slight nausea; increased pain in the knee, and then running up and down the leg; discharge from the right sinus somewhat increased.

March 24th. Dose, .0054 gm. Out in the yard yesterday for the first time in six or seven months.

March 28th. Dose, .0048 gm.

Summary. — Number of injections, 23; amount used, 102.5 mg.; highest dose, 7.2 mg.; highest temperature, 103.4°, on the second day after the thirteenth injection of five milligrammes. Discharged, not relieved.

May 1st. Patient has shown marked improvement of the general condition since the omission of the treatment.

Case 18. Winthrop. Admitted January 6, 1891. Service of Dr. J. C. Warren. Born in Maine, nineteen years old, single. One brother dead, and one dying, of pulmonary tuberculosis. Disease began in March, 1889, with ulcerations on the upper right arm.

General health poor; appearance anæmic; strength poor; emaciated; poor appetite; fair sleep; heart and circulation negative; has chills, fever, night sweats; breathing is shallow; slight cough; slight expectoration; has pain in the lesions; urine acid, normal color, 1009, albumen one-eighth of one per cent., pus, blood, vaginal and bladder ephithelial cells; abdomen negative. First entered the hospital in September, 1889; nine months before, ulceration appeared on the upper right arm, which was persistent and spreading. Was robust and well grown. Lungs sound; granulating ulcers over the right deltoid, apparently superficial.

January 6, 1891. Has lost twenty pounds of flesh since leaving the hospital, and failed steadily in strength. Has constant cough. Some ulcerations healed, some appeared and some old ones reopened. Examination showed that under the left axilla there is a fluctuating tumor, of the size of a walnut, with a number of small ulcerated surfaces over the whole upper half of the chest, with the skin about them red and infiltrated. Slight discharge of purulent fluid. In the left apex, diminishined respiration, coarse and fine moist râles, extending to below the third rib.

January 7th. Dose, .001 gm. Fever reaction. No increase of cough or expectoration. The abscess under the left arm is enlarged and softer. The discharge slightly increased.

February 21st. It being evident that the treatment could not save the patient, it was deemed advisable for her to go home while it was possible to transport her. Discharged. Died in about three weeks.

Summary. — Number of injections, 10; amount used, 27.7 mg.; highest dose, 4.8 mg.; highest temperature, 104.4°, after the seventh injection of four milligrammes. Discharged, not relieved.

March 10th. Patient died of exhaustion about two weeks after leaving the hospital. No autopsy was obtained. Treatment was begun at all only as a desperate chance, and by request.

CASE 19. Athol. Admitted December 31, 1890. Service of Dr. J. C. Warren. Nineteen years old, single, clerk. No family history of tuberculosis. Disease began with pneumonia nine years ago. General health good; fair strength; good nutrition; good appetite; heart and circulation negative; has a slight pain in the chest; abdomen negative. Had an attack of pneumonia, lasting five months, nine years ago. Pus was drawn off with a needle from the right lung. Was well until three years ago, when an abscess formed in the right side, which was lanced, and there has been a constant discharge of pus since then.

Examination shows a well-nourished boy, in a good state of health. In the sixth interspace of the scapular line is a cicatrix, evidently the mark of a previous opening. A spot over the seventh rib, and outside the mammillary line is the opening of a sinus upward for about three inches. It does not appear to communicate with any cavity, nor extend from side to side for any distance. Percussion note over the right chest is vesiculo-tympanitic; respiratory murmur almost entirely absent. The sinus syringed out, and a dry dressing applied.

January 3d. Dose .001 gm. No reaction.

February 24th. Operation by Dr. Warren. Ether. Two and one-half to three inches of the rib were excised, close to the costal cartileges. The soft granulations removed with a spoon; a pocket of foul pus in the posterior part of the chest; two pieces of drainage-tube, each two inches long, found and removed (very foul and nearly disorganized). Cavity washed out.

March 7th. Dose, .0078 gm. No result. Weight 115 pounds. Sent to the Convalescents' Home.

April 20th. The report is that the general condition is much improved. Feels as well as he ever did. Discharge very much diminished; thin and no odor. Lung resonant about the sinus.

Summary. — Number of injections, 18; amount used, 144.8 mg.; highest dose, 21.6 mg.; highest temperature, 102.6°, after the fifth injection of three milligrammes. Discharged, not relieved (by the treatment).

CASE 20. Roxbury. Admitted March 10, 1891. Service of Dr. F. C. Shattuck. Born in Boston, thirty-six years old, married, physician. Mother's sister died of consumption. No other cases on either side. Has five brothers and sisters living and well. Has had measles and chicken-pox. Disease began, two years ago, with a sore spot in the trachea, after having had a cold. Glands above the left clavicle are enlarged and tender. Has febrile attacks about every four weeks, then a normal temperature, and repeats. General health good; no hæmorrhages; is of a dusky appearance; fair strength; good nutrition, appetite and sleep; no chills; periodical fever; temperature 100°; pulse 115; respiration 24; breathing slightly interfered with; no cough except a dry hack; no expectoration; no bacilli have ever been found in the sputum; has pain only at the time of the febrile attacks; no nausea; no vomiting; urine pale, 1010, acid, no albumen; abdomen negative. There is distinct swelling of the glands about the region of the right clavicle at the neck. Other examinations negative. Hæmoglobin sixty-five per cent., according to outside examinations. The special peculiarities of the case are the repeated febrile attacks, attended with pain and swelling of the affected glands, occurring at repeated intervals. Has moderate dyspnœa during the attack. Is just recovering from one at the time of entrance. Treatment at patient's request.

March 11th. Dose, .0006 gm. General condition fair; good appetitite; poor sleep; increased cough; increased pain over the right chest. Temperature rose a little earlier in the day than usual.

March 23d. Dose, .0072 gm. General malaise increased; increased cough; increased pain in the glands. Patient was discharged because further treatment seemed hopeless, and because of the result in Case 32.

Summary. — Number of injections, 7; amount used, 27 mg.; highest dose, 7.2 mg.; highest temperature, 101.8°, after the fourth injection of 4.8 mg.

April 19th. About a week after leaving hospital, patient had high temperature, much increased swelling of cervical glands, with pain; dyspnœa; loss of right radial pulse. In three days, temperature sank; and the enlarged glands have almost completely disappeared. General condition much improved. Discharged, relieved. The relief in this case is present, but not explicable.

(To be continued.)

IN reply to an inquiry from the Marine-Hospital Bureau, relative to newspaper reports of cases of yellow fever at Brunswick, Ga., a telegram was received stating that there has not been even a suspicious case.

THE CLINICAL COURSE AND THE PRINCIPLES OF TREATMENT OF CHRONIC ANKLE-JOINT DISEASE IN CHILDHOOD.[1]

BY CHARLES L. SCUDDER, M.D.,
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Tubercular disease of the ankle-joint in children manifests itself by a sequence of unique signs and symptoms.

The following report of a case is made in much detail, for it presents an almost complete picture of the course of this not very uncommon affection. Therefore, it affords an admirable opportunity for the presentation of the principles upon which is based the treatment of chronic ankle-joint disease in childhood.

E. B., four years old, one of six children, had always been well. Her family is of English descent, giving no tubercular history, and generally in good health. In October, 1888, she received a slight injury to the left ankle. Subsequent to the traumatism, the ankle-joint was slightly swollen and puffy, particularly at its outer side. Upon beginning walking in the morning the ankle was stiff. After walking the child became tired and was a little lame. There was no pain, neither was there tenderness felt.

The mother tells me that in February, 1889, a starched bandage was applied to the ankle and allowed to remain a short time. In June, 1889, a plaster bandage was used, and was worn for fully two months. Upon its removal the child walked very stiffly. Then liniments and a silk bandage were employed. The child continued lame, and the swelling about the ankle persisted.

In February, 1890, I saw the patient for the first time. Upon examination, I found a child rather pale, but well nourished and well developed, who walked with a decided left ankle-joint limp. A fullness existed behind and on either side of the malleoli, greatest below the inner malleolus. Fluctuation is indistinctly present over this swelling, and elsewhere about the joint there is an elastic feel. The surface temperature is slightly elevated. Motion is present at the joint, but within the extremes of flexion and extension it is limited by muscular spasm. Upon forced passive motion the child cries from pain. The left calf is one inch smaller than the right. The left foot is three-quarters of an inch shorter than the right foot. The left ankle measured over the heel and swelling one inch more than did the right ankle. The left tibia is shorter than the right, and there is no apparent difference in the two femora.

Pain is present from slight jarring of the foot, and the child refuses to walk. The foot and ankle are carefully guarded from accidental injury. There is no history of especial pain at night.

A posterior wire splint from the toes to above the knee, together with a Thomas knee and ankle splint, were applied. A bandage was put on from the toes to the knee, affording even compression. A high shoe on the well foot and crutches completed the outfit. The patient was encouraged to go out of doors. A general tonic was given. At the end of six weeks the condition was not so good. There was loss of appetite; a pale appearance of the face; the local pain was more severe; the swelling about the joint was greater. The disease was progressing, and that rapidly.

[1] Read at the meeting of the Surgical Section of the Suffolk District Medical Society, April 1st, 1891.

Therefore, in April, 1890, one year ago, under antiseptic precautions, I operated by the two lateral incisions, removing all periarticular gelatinous material, and also removing the diseased astragulus entire, with the cuboid and one-third of the os calcis. I curetted very thoroughly considerable of the lower epiphysis of the tibia, until good hard bone could be felt on all sides. Thorough bichloride irrigation was employed before the removal of the Esmarch. The cavity formed was packed with corrosive sublimate gauze. A posterior wire and side splints were applied, with even pressure. The first dressing was done on the tenth day, and all went well. The patient was allowed to be about with the Thomas splint soon after the operation. Six months later she was walking on the foot, having been let down from the support of the splint tentatively.

The present condition of the joint, one year after the operation and six months since first walking on the foot is as follows: The wounds are healed. There is no tenderness. The arc of motion at the left ankle is between 35° and 40°; at the right ankle, 66°. The left calf is three-quarters to one inch smaller than the right calf. The left tibia is three-quarters inch shorter than the right tibia. The left foot is seven-eighths inch shorter than the right foot. There is a limp in walking, which gradually is becoming less noticeable. The general health is excellent.

The duration of the disease, from the first noticeable symptoms to the time of the healing of the operative wounds, was, therefore, about two years. The usefulness of the foot is all that can be desired.

How shall the initial symptoms be interpreted? The disease probably began before the slight injury in 1888. Traumatism plays a very small part in the etiology of chronic joint disease, and particularly in the ankle-joint. At first the trouble was unnoticed, and then swelling appeared, unaccompanied by pain or lameness. If the joint at this stage could have been looked at there would have probably been found a synovial membrane thickened, having a gelatinous, grayish appearance, studded here and there with miliary nodules corresponding to tubercles. And a granulation tissue would have been seen projecting fungus-like from the altered synovial membrane into the joint space. The synovial fluid would have been found altered in appearance. Pathological evidence is yet to be furnished, which will demonstrate the existence of a *primary* tubercular synovitis. Clinically these cases exists as a chronic synovitis, with the strong presumption that they are either primarily tubercular or secondarily so. There was no pain because the synovial membrane, the only tissue involved in the disease, contains few nerve filaments. The onset of the disease was insidious, and the progress slow. This very progressiveness, however, is characteristic of the lesion.

The symptoms of chronic *synovial* disease are, therefore, a gradual onset; change in the joint outline; an elastic feel about the joint; a normal use of the joint; the absence of a marked limp, of pain and of muscular spasm; and, finally, the absence of remissions. The disease is continuously progressive.

What are the indications for the treatment of a beginning chronic synovitis?

In this case immobilization was attempted by means of stiff bandages, and traumatism was permitted, for, with the bandage on, the child walked about. This

treatment was entirely wrong, and worse than useless, as the subsequent course of the disease proved. Nature indicates the principles of treatment very clearly. The joint is allowed to move painlessly, therefore does not immobilize. And repeated traumatisms, received in walking, caused in the ankle-joint a tired feeling and stiffness, therefore modify or prevent trauma, either by walking less or by completely protecting the joint, or by removing the pressure of the body-weight to the perineal band of a suitable apparatus. We should then seek in the treatment of chronic synovitis to allow joint motion without permitting the trauma of locomotion.

After the evidences of synovial disease were well established, we find that new and remarkable symptoms developed. As the granulation tissue associated with the tubercular process extends and invades the cartilage and the bony tissue beyond, and the purulent and cheesy products accumulate, the swelling increases rapidly, and the joint becomes extremely sensitive. Then appears muscular spasm; and muscular and bone atrophy become prominent.

The sensitiveness is due to the involvement of the bony epiphysis, which is well supplied with nerves, and it is due also to the distension of the articular and periarticular tissues with the rapidly accumulating inflammatory products.

The muscular spasm is Nature's method of splinting the joint and preventing the harsh opposition of two inflamed bony surfaces. Muscular spasm always accompanies an osteitis of the joints, and its detection at an early stage of the disease is of the highest importance, and demands the nicest judgment. It is of reflex origin, purely involuntary, and is overcome only by very great force, complete anæsthesia or the proper treatment of the disease. It is the evidence par-excellence of chronic osteitis.

The muscular atrophy is greater than that associated with simple disuse of the limb, and its cause is to be discovered in some nervous lesion. The bone atrophy is always associated with any interference with the development of the epiphysis, and it is a fact, I believe first emphasized by Shaffer,[2] of New York, that there is a direct relation existing between the location of the inflammation and the amount and character of the muscular spasm, the muscular atrophy, and the bone atrophy.

The presence in this case of marked atrophy in the length of the foot, together with the position of the swelling, led me to locate the bone lesion in the astragalus, and upon measuring the tibia and finding it likewise greatly shorter than the opposite bone, I suppose the disease to have invaded its lower epiphysis. The result of the operation confirmed the observation as to the seat of the lesion.

How strongly contrasted are the pictures here presented of the two great classes of chronic ankle disease, the synovial and the osteitic! On the one hand is the lowly organized non-sensitive synovial membrane, involved in the slowly progressing tubercular inflammatory process. The purely objective signs of local swelling and elasticity in the part and a slight tired feeling upon exertion, silently afford evidence of the disease. All else is negative. On the other hand, the more sensitive bone-tissue being involved, the symptoms are both objective and subjective, and greatly intensified. There is increased swelling, increasing disability of the joint function, walking becomes difficult and eventually is not even attempted. There is present the involuntary muscular spasm, checking undue mobility of the inflamed parts. Then appear muscular and bony atrophy. Pain is often present independent of movement.

Occasionally the osteitic cry at night is heard, resembling that so commonly associated with chronic disease of the hip-joint.

The indications for the treatment of chronic *osteitis* of the ankle-joint then are evident. The muscular spasm is often so great as to hold the joint perfectly rigid, as if firmly ankylosed. Here is indicated absolute immobility, the first principle of treatment. The characteristic limp, which interpreted means a disinclination to use the joint, points to the prevention of all traumatism as the remaining principle of treatment.

The application of these principles necessitates the use of some form of apparatus, which requires in each class of cases the nicest judgment in design and the greatest care in adaptation, and it must be modified from time to time to meet special requirements as the case progresses. "The appliance is only a tool which is capable of being manipulated to produce certain results. . . . Here, as everywhere in strictly orthopedic work, it is a question of method, not means; principles, not rules; men, not machines."

The proper adaptation of apparatus to chronic joint disease just described; the correction of any malposition occurring in the course of the disease; the careful attention to the general health; the occasional opening of an abscess, — these procedures constitute the expectant method of treatment.

It is true that in a majority of cases of chronic ankle-joint disease the mechanical treatment, based upon established principles, is demanded; and that, if perseveringly and intelligently carried out, it will result in a satisfactory termination of the disease. It is, however, a clinical fact, that tuberculosis of the ankle-joint, whether of primary synovial or osteitic origin, at times appears most malignant. The parts seem to go all to pieces, in spite of these expectant methods, as in the case reported. The attack by the bacilli is most virulent. Tissue is quickly destroyed, — great abscesses form in consequence. The general health fails.

What, then, are the indications for treatment in this class of cases? They are as plain, and based on as sound principles, as any in the field of either mechanical or operative surgery. Nature is attempting, in her slow and tedious fashion, to get rid of the diseased part, which at first is a purely local affection. The indication then is, for a complete excision of this local disease. The surgeon, by excision, merely interprets Nature's need and assists her.

An excision may be done either at the outset of the disease or as a last resort, or at the first appearance of malignancy. The results of the expectant methods in the early stages of the disease are too good to justify operative interference at that time. The best results are not obtained when an excision is done as a last resort, late in the course of the disease. It is the surgeon's duty, who assumes the responsibility of the treatment of chronic joint disease, to be so familiar with the details of his cases that he may detect the first evidences of malignancy; and when they remain unchecked by proper mechanical treatment, then, and only then,

[2] Lecture on Ankle Disease. Annals of Surgery, 1882.

judging from all the evidence that can be obtained, is an operation justifiable.

The only possible exception to the above rule will occur in those children of poor parents who cannot give the time and the proper care to expectant methods. In these children an earlier operation is justifiable.

In determining the evidences of malignancy or need for operative interference there are many factors to be considered in each individual case. These are: The age of the patient; the duration of the disease; the previous treatment; the hereditary history; the present appearance of the part; the general condition of the patient; the circumstances of the patient. The importance of each of these factors has been discussed elsewhere, and need not be dwelt upon here.[1]

From a study of the cases of ankle-joint disease operated upon at the Boston Children's Hospital during the twenty years between 1869 and 1889, and in which the end results are known, the following observations have seemed clearly warranted.[1] Primary amputation in children and young adults is never justifiable for chronic ankle-joint disease: an aseptic complete excision of the diseased bone is a safe procedure; a partial operation is comparatively of no value; gouging and the burr drill are blind methods, and almost worse than useless; the time of the after-treatment is greatly diminished; the general health improves rapidly after excision; profuse suppuration and its attendant dangers are immediately checked; the danger from tubercular and septic infection is diminished; the extent of the disease does not contraindicate an operation for its removal; the result as to usefulness in all cases has been good.

In conclusion: The case reported illustrates the two great classes of ankle-joint disease, the synovial and the osteitic. From it the principles of treatment for each class have been deduced. This case has also demonstrated (1) the failure of improper treatment at the initial stage; (2) the failure of proper mechanical treatment when too late to be of benefit; and (3) the success of operative measures, the indications for which have been given.

Reports of Societies.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

GEORGE H. MONKS, M.D., SECRETARY.

Regular Meeting, Wednesday, April 1, 1891, Dr. A. T. Cabot in the chair.

Dr. O. K. Newell read a paper on

THE TREATMENT OF URETHRAL STRICTURE, AND SHOWED A NEW DIVULSOR FOR RAPID DILATATION.

Dr. H. W. Cushing: Did I understand you to say that stricture of the urethra was incurable?

Dr. Newell: Yes.

Dr. Cushing: Do the remarks you have just made apply to strictures of the urethra, regardless of their site and origin?

Dr. Newell: That statement applies to every stricture where plastic lymph has become organized, and true cicatricial tissue has formed.

Dr. Cushing: I understand that the method you would advocate would be gradual dilatation except in a few extreme cases?

Dr. Newell: Yes. I hold stricture of the urethra incurable, just as œsophageal or rectal stricture. The only way of maintaining a good lumen is by watching and passing some sound or divulsor. A good many inflammatory strictures pass away, and I think a urethral stricture might be cured by means of a plastic operation, but one formed by the organization of exuded lymph I do not believe is curable.

Dr. Cushing: That statement differs from the opinions of other specialists. Without referring to recorded statistics in my personal observation I have seen strictures which have been practically cured by urethrotomy. These patients return from time to time for observation, but apparently very little change has taken place in their urethræ from year to year. I can recall one or two instances which I have had under observation at the Genito-Urinary Department of the Boston Dispensary for several years. These cases were operated on by Drs. Watson and Tilden in 1883 I think. I remember seeing one of these cases last year, and having the opportunity of examining it, and as far as could be determined from our previous records there has been no special change. The patient is well.

The system of gradual dilatation is I think a very valuable one, but I think I should hesitate in going quite so far as Dr. Newell does in saying that the treatment of strictures should be limited almost entirely to that method. In certain cases (of course I do not refer to those cases where there is a marked narrowing of the urethra, apparently due to subacute inflammation or œdema which can be relieved no doubt by gradual dilatation), there exists such a sensitive condition that any attempt at manipulation in the usual way, by gradual dilatation, is followed by quite serious symptoms; and in those cases it has been found, in the experience of some surgeons, and also my own, that such patients not infrequently can be submitted to a cutting operation, and a favorable result rapidly obtained without any of that unpleasant and sometimes dangerous reaction which accompanies occasionally gradual dilatation, and the continued irritation of passing instruments according to that method.

Another thing which interested me was Dr. Newell's statement in regard to the results following divulsion. I should like to inquire if Dr. Newell can give me any information as to what takes place when this method is employed? If there have been any post-mortem observations? I think you made some experiments on the cadaver. My experience with cutting operations, both internal and external, has been much more satisfactory than Dr. Newell's statement would lead me to expect.

I think a more satisfactory classification of the treatment employed in these cases would be according to the site and character of the stricture; some of the deeper strictures being very satisfactorily treated by the method of external urethrotomy; others, situated more anteriorly, by means of internal operative manipulation, preferably the "Otis" method.

Dr. G. W. Allen: I have read, with a good deal of interest, about Oberlænder's treatment of stricture which is a modification of divulsion or rapid dilatation by means of an instrument with spreading blades, which, by means of a screw, are opened to any extent, on the principle of Otis's urethrametre.

[1] Boston Med. and Surg. Journal, January 30 and February 6, 1890.

It is my impression that the class of cases in which he most uses this treatment is that of strictures of large calibre in the anterior urethra, and according to my experience the commonest site of stricture is the peno-scrotal angle, or within an inch or a little over anterior to that point. The peculiarity of these strictures is that they are generally associated with or perhaps caused by an inflammation of the lacunæ, constituting a glandular or periglandular urethritis.

These glands, when inflamed, may be seen through the endoscope as minute punctiform depressions scattered along the anterior urethra, but most numerous in the vicinity of the peno-scrotal angle where they are apt to occur in groups, generally on the roof or sides of the urethra, and are, as a rule, associated with a rigid appearance of the mucous membrane. At such a spot the olive-pointed bougie will invariably show the presence of stricture.

I think this condition has more to do with keeping up gleet than any other one thing. The matter of stricture is of secondary importance and it makes very little difference how large the stricture is; it is the condition of the mucous membrane which keeps the discharge going. I have seen a case where the calibre of the stricture was thirty-eight, but the trouble from it was as great as if it had been twenty sizes smaller. Oberlænder's idea is to dilate this point at successive sittings, two or three sizes at a time. The result is to split open these little glands, after which applications of nitrate of silver are made.

DR. A. T. CABOT said that he was surprised to hear Dr. Newell advise the daily use of bougies for the gradual dilatation of strictures. In his experience such a frequent use of instruments through the urethra acted rather as an irritation, and excited the stricture to contraction rather than accomplished its dilatation. In moderately close strictures he had often found it impossible to pass so large a bougie on the second day as he had done on the previous day. This seemed to be due to the swelling of the mucus membrane through the stricture caused by the irritation of the instrument.

In answer to the question of Dr. Cushing as to the result of divulsion, he would say that it had happened to him to see autopsies in two cases where he had divulged the urethra. One of these patients died of disease of the suprarenal capsules, and the other one of suppuration around the gall-bladder. The divulsion had been done about three weeks before the death in each case. In both of them the stricture had been a rather narrow one, admitting only a filliform bougie, but had yielded readily to divulsion. In both, the post-mortem appearance was of a perfectly smooth mucous membrane at the site of the stricture. There was no evidence of laceration such as we are told always follows divulsion. It was certainly in each case as good a result as we could expect from any method of treatment whatever.

The kind of stricture in which an invagination may take place by efforts at divulsion, is the very tough cartilaginous stricture which is ordinarily met with in the penile portion of the urethra. The speaker said that he had known of one such case where the divulsor tore away the urethra at the point of the stricture, and pushed it into that portion of the canal posteriorly. He would prefer to treat a stricture of this sort by internal urethrotomy. If, however, it was deemed wise to divulse such a stricture, he should think that the little advance blade of Dr. Newell's instrument might, by insinuating itself through the stricture, make such divulsion easier.

He said that practically, he had never met with a case, where he thought divulsion a proper operation, in which the Bigelow divulsor did not hug the shaft closely enough to insert itself within the stricture and readily divulse it. The instrument with which the invagination used to take place was the much more blunt-pointed divulsor of Voillemier.

In regard to Dr. Newell's statement of belief that external urethrotomy should only be used in impermeable strictures, he would say, that that was a point on which there might be very great differences of opinion. Among a large number of the best practitioners in this branch of surgery, in the country, for instance, it is the opinion that all deep strictures when they are tolerably tight and resistant, and do not yield readily to gradual dilatation, should be treated by external urethrotomy. This opinion is based upon the belief that by external urethrotomy, and providing an adequate drainage for the bladder, there is less danger of septic absorption and of consequent serious results than after divulsion or internal urethrotomy. Also by external urethrotomy, the stricture can be divided more intelligently, and even in appropriate cases the strictured area can be completely removed, and the ends of the urethra brought together where the separation is not too great, or a mucous membrane from some other part can be introduced to fill the gap. Probably in this question, like so many others where opposite views are held by intelligent men, the truth lies somewhere between the extreme views, and it is best to select for each case the operation suitable for that case. If the stricture is soft and readily divulsed, that is probably the best operation; whereas, if it is more resistant, and the divulsion would seem likely to cause considerable laceration of the urethra, the external urethrotomy should probably be the operation of choice.

DR. NEWELL: In the first place, although I have tried to construct a divulsor, yet I do not believe in divulsion except where you are obliged to do it. I believe the best treatment is gradual dilatation, with the stricture in whatever part of the canal. I wish some one had criticised the intermediary cases where you make a primary divulsion in order to get ahead faster with a very small stricture.

In regard to Dr. Cushing's question in reference to cure, and just what happens, I base my opinion largely on the authority of a mutual friend of ours, Professor Dittel, of Vienna. He wrote the volume on "Stricture" in the *Deutsche Chirurgie*. He has collected an immense amount of material, and has a splendid atlas on the subject, with specimens and water-color views by Heintzmann. I speak of that so that we can answer the question as to what happens in divulsion, in contradistinction to what we know to happen in internal urethrotomy. A stricture is usually a uniform condition around the urethral canal, and you don't have a local single thickening of the canal. It is on section of the strictured urethra very rarely that you find a laterally thickened portion with organized cicatrix. The disease is pretty evenly disseminated, so that you have around the urethra an organized tube of callous of varying lengths. This when rapidly stretched with the divulsor is ruptured in lines radiating pretty evenly throughout its circumference. This is in contradis-

tinction to urethrotomy where you cut in one direction. In regard to what Dr. Cabot said as to the size of strictures, and the frequency with which instruments are passed, I think that is perfectly true; and I stated in my paper that I always advised patients that the best interval is every other day. Where the irritation is slight, I find every other day is the best period of frequency. Reginald Harrison has spoken of this matter of "reaction." I think this is something that is disappearing from urethral surgery. It is seldom seen nowadays. Patients seven or eight years ago died from urethral fever, etc., but the danger at present has been much diminished. In Professor Dittle's work, which was published about six years ago, he gives a long list of accidents from this cause among the earlier cases.

I think one danger of external urethrotomy is the liability that the fistula may be permanent. In a recent discussion in New York there has been a great objection to internal urethrotomy. One man remarked that he had got tired of having patients come to him with their boots full of blood.

As to the cure and the time, Dr. Cushing mentions cases of eight years ago. It is not a matter of three or eight years with a stricture; it may be a matter of ten, twenty or thirty years, but in time it will come back if unattended to.

DR. E. H. BRADFORD read a paper on

A PAINFUL AFFECTION OF THE FOOT.[1]

DR. CUSHING: Does this ever occur between any other metatarsal bones than the fourth and fifth?

DR. BRADFORD: Dr. Morton saw one between the second and third. He has seen one case at the third, and I have seen one at the third.

DR. CUSHING: I have personally treated but one case which might be included among those described by Dr. Morton. In that patient, a girl of fourteen, the neuralgic pains were not so marked as Dr. Bradford has portrayed, nor did they extend up the leg. The tender spot was on the dorsum of the foot, and in the second metatarsal space. The patient was readily relieved by systematic and careful bandaging with flannel. If the pathology of this affection is as stated by Dr. Bradford, it would lead me to doubt my diagnosis, since by bandaging the tissues were compressed as well as immobilized, and one would suppose that such pressure (as here described) on a sensitive nerve would cause pain rather than relieve it.

DR. BRADFORD: Dr. Morton mentions the use of a bandage in that it steadies it.

DR. J. J. MINOT: I should like to ask whether the same thing might not be brought about by using an internal sole, with a big shoe, and then cutting holes through the soles to relieve the pressure and bringing the pressure differently.

DR. BRADFORD: I do not think that that would. That is useful for a different condition of the foot.

DR. C. L. SCUDDER read a paper entitled

THE CLINICAL COURSE AND TREATMENT OF CHRONIC ANKLE-JOINT DISEASE IN CHILDHOOD.[2]

DR. BRADFORD: I think there is nothing to be added to this excellent paper. I am very glad he has emphasized one fact that I think is often overlooked, namely, that in osteitis of the ankle-joint, encasing the foot in plaster-of-Paris and allowing the patient to walk without splint or crutches is careless treatment. When you have a diseased astragalus with a tubercular focus in the middle of it, you cannot allow walking with safety, unless crutches or a splint are used, and this is true although walking may not be painful; where there is a pure tubercular synovitis without disease of the bone, the danger is less. In regard to operation, I think the tendency of surgery is expressed by some writer, that we tend toward greater boldness in the ankle, greater boldness in the knee, and more conservatism in the hip.

DR. BRADFORD, then showed

A FIBROMA OF THE UTERUS REMOVED BY HYSTERECTOMY.

During the operation the bladder was accidently wounded. It was sewn by Dr. Watson and held perfectly, as was shown at autopsy three weeks later, death occurring from sepsis.

Dr. Bradford also showed a specimen of

AN APPENDIX REMOVED DURING THE INTERVAL OF THE ATTACKS,

which was interesting, as these cases were not common. The appendix was removed after the third attack. The patient made an excellent recovery.

[1] See page 52 of the Journal.
[2] See page 59 of the Journal.

MASSACHUSETTS MEDICAL SOCIETY. THE ONE HUNDRED AND TENTH ANNUAL MEETING.

BOSTON, JUNE 9 AND 10, 1891.

SECTION IN SURGERY.

(Continued from No. 2, page 38.)

DR. JOHN HOMANS: The treatment of inflammation of the appendix has been actively discussed for about five years. The diagnosis has been pretty well settled, and any physician up to the ordinary standard of today ought to be able to make it. I will not waste time talking about this part of the subject we are considering.

Notwithstanding all this discussion until the subject has become almost trite and hackneyed, the practical recognition of cases that would be fatal if left to themselves and of those that would recover without surgical aid, is as difficult as ever. In my own practice, when I operate I am sure that I am right; but when I do not, I am not sure that operation ought not to have been done. The condition of the abdomen both internally and in its walls, after laparotomy for appendicitis, is not always satisfactory, and some of the recoveries might almost as well have died. I have had under my care, for the last four months, a man successfully operated upon, nine months ago, who has chronic discharge from two sinuses, the seat of former drainage-tubes. Another case of long but perhaps perfect convalescence, lasting more than four months, and in which the appendix was removed, has a hernia.

The possibility of the supervention of chronic suppuration, or of hernia, ought not to prevent us from operating on a case of appendicitis; but how are we to distinguish those cases requiring operation from those that will recover without it? I confess that, in a doubtful case, I am guided largely by rational symptoms.

Again, those cases have done the best, in my experience, where a well-defined abscess has formed at the

end of ten days or even of several weeks. So, I prefer, if I can, to wait until such an abscess has formed, if possible. But how are we to know it is going to form, and that the patient will not die of septacæmia or general peritonitis, before we have the appendix shut off in an abscess? I operated once within thirty-six hours of the first symptoms, on a strong, healthy boy of twelve. I found the abdominal cavity to contain opaque serum, floating freely and not encysted, I did not find the appendix; but at the autopsy, five days later, Dr. Fitz found it gangrenous in the rectal fossa by the side of the rectum, and covered by the gangrenous bowel. There was general peritonitis and much pus. I believe this case was necessarily fatal from the start, and so are some others; but my early operation was of no use.

Lately I saw a case on the fifth day: a boy, nine years old, a patient in Dr. W. L. Richardson's ward in the Massachusetts General Hospital. I judged it best to delay operation a few days, and I think the result justified my action. Three days later the abscess was opened by Dr. Warren for me, in my absence, and the boy is doing well. The appendix perforated but swollen, was removed.

I have under my care at present a case not requiring operation, I think. A lady has been comfortably ill for two weeks. There is a distinct tumor in the right iliac fossa. The tenderness is gradually subsiding. Now, if she gets able to be about and attend to her duties without inconvenience or pain, in short is well, she will be better off than if she goes about a year waiting for an abscess to close — and these abdominal abscesses seldom do close — or a ligature to come away, or a hernia to be cured, or with pains from adhesions. I have stated all these drawbacks, not because I wish to discourage laparotomy for appendicitis, for I am a firm believer in it, and if any one will look over my contributions to the *Boston Medical and Surgical Journal*, he will find many cases of appendicitis operated on by me; but I want to learn to distinguish between those cases which demand and those which negative operation.

Now, if successive attacks of appendicitis cause life to be of little value from apprehension or interruption, I would recommend an operation for removal of the appendix. Such a case I have lately treated; and I found the appendix wrapped up in a piece of thickened and gangrenous omentum, from which, and from the bowel, it was separated by a patient dissection, and was removed, close to its base. A piece of omentum, more or less gangrenous, as thick as my finger, and about two inches square, was also removed. This man recovered. Perhaps he would have done better if he had been operated upon in his first attack, but I am satisfied with the result. Gangrenous appendicitis demands operation. How are we to distinguish it from catarrhal inflammation? I think we must be guided in a great measure by the rational symptoms. If a day or two after the first onset vomiting ceases, the countenance becomes bright, the temperature falls below 100°, and the pulse to about 80, and the abdomen is soft and not tense, I think we may expect a favorable issue, with a convalescence tardy often, and tedious, but still pretty sure. On the other hand, a tense abdomen, great mental anxiety, a rising temperature and pulse, with inability to take food, and increased tenderness in the iliac region, especially with a protrusion into the rectum, urge immediately operative interference, and removal of the appendix also, if it is easily found.

The varieties of appendicitis may be classically called four:

(1) One in which the appendix is perforated, and perhaps the cæcum also, and general peritonitis is at once set up. This class of cases is generally fatal, with or without operation.

(2) Another variety has perforation of the appendix, with limited peritonitis, soon shut off in an abscess of varying size, but generally rather large and forming a well-defined tumor, often quite prominent. This class demands operation and drainage, and is generally cured.

(3) A third variety has the appendix swollen and œdematous, but unperforated; and yet the symptoms are severe, and there is great anxiety and often distension. The tumor here is ill defined and small, but there is considerable tenderness, with high temperature, pulse and abdominal distension. With no improvement in three or four days, laparotomy, and removal of the appendix, if easily found, is proper.

(4) The fourth variety has a sharp pain at first, soon subsiding. Perhaps one attack of vomiting, a tenderness on pressure, and a swelling in the right iliac region, and without any tumor in the rectum. These cases resume an almost normal temperature and pulse in a few days, and though the convalescence often lasts from four to five weeks, yet health is finally restored. The liability to subsequent attacks, however, is problematical, but operation in the initial attack is improper.

The diagnosis of appendicitis is one easily made. The treatment by operation consists in making an incision about three inches long, over the most prominent part of the swelling. When this is not well defined, the centre of the incision should be at a point about two inches from the anterior spine of the ilium, in a line drawn toward the other iliac spine. If there is difficulty in finding the appendix, you will be guided to it by the longitudinal bands on the cæcum, all of which lead invariably to the base of the appendix, as was pointed out to me about two years ago by Dr. Whitney, the Curator of the Warren Museum. In this operation the appendix should be removed if it is easily found, and its base should be tied, and its mucous surface turned in by a suture. Except in the œdematous catarrhal cases, without much, if any, suppuration, drainage with one or two tubes of rubber or glass, should be practised, and the cavity should be well irrigated. The edge of the wound, the suture-holes, and the interior of the abscess slough more or less in severe purulent cases, and although without drainage, the necrosed tissue and pus generally break through externally rather than internally, yet I think drainage is safer.

The convalescence in all cases, whether operated on or not, is apt to be long, and I do not think it any quicker in those cases where the appendix is removed than in those where it is not found. As I said some three years ago, I think the treatment of appendicitis is the most important practical question in surgery at the present time.

DR. C. B. PORTER: It seems to me that the subject of appendicitis, or the cases of that disease rather, can be divided in a general way into three different classes. The first and most important is what has been called the fulminating type of appendicitis, in which all the

symptoms are in great excess over the other two forms, and in which, without early interference, death is sure to follow. The second is the acute variety, in which the symptoms enter in with nausea, vomiting, pain referred to different places, generally to the umbilicus in the first place, and then to the right iliac fossa, and then to some other portion of the abdomen, this being easily explained by those who recognize the great variety of the positions of the appendix in the different cases. Then the third class, which is subacute, and in which the symptoms are not so well marked, and in which they progress much more slowly, and in the majority of cases recover.

Your chairman invited me to speak to-day more especially upon the third class, as I have defined the three; and those are the cases which give the recurrent attacks, or, in other words, the constant and repeated occurrence of pain, nausea, vomiting and invaliding, often, in bed. The whole subject has interested me, as other active surgeons, for a number of years; but some three years ago this subject especially was brought to my mind from the fact that Dr. Hodgdon, of Arlington, brought me the case of a young man who had an attack nearly every month, which put him in bed, and he was in such a condition that he really was unwilling to absent himself from home for a night, for fear he would have an attack and be away from his home surroundings and from his physician. Going over the case very carefully, and having already looked up the literature of the subject before that, and seeing what had been recommended by Treeves and others, Dr. Treeves being the first man who recommended the excision, I proposed that he talk the matter over at home and decide whether he would submit to an operation. They selected the operation. That was done in the remission between the attacks. That was the first case which I operated upon, and it was more than two years ago. The appendix was found enlarged, stiff, standing up stiff in the wound, and adherent to the omentum. It was tied off about one-fourth an inch from the intestine; the mesentery was tied and removed. On account of the very great thickness of the walls of the appendix, it was impossible for me to invaginate it, so I covered it with a flap of omentum. The lumen of the stump I cauterized with the actual cautery. The wound was sewn up without drain. The young man made a perfect recovery, and has never had a return.

I had at that time another case, in which there had been a number of attacks. In the last attack which came to my attention, it went on to the formation of a tumor, which could be diagnosed by the rectum as well as over the iliac fossa, and there was a point in the rectum which seemed as though it was soft and fluctuating; there was a crater, such as you find in a softening abscess. It was thought best to operate in the ordinary way. This I did with the assistance of Dr. Elliot, who lifted the tumor from the rectum, and was enabled to puncture and evacuate the pus. He made a very good recovery in the ordinary way, as that class of cases do.

When I was about to show the first case to the Medical Society, I was going to find out what had become of this second case. On the very morning of the day when I made my report, this man appeared in the accident-room with another attack. I said to him, on seeing him in the ward, "How many attacks have you had in the last year?" He said, "I have had so many attacks that I have not kept account of them." It was one of the milder attacks. When he recovered, I proposed to him, the removal of the appendix. It was done; and he made an uninterrupted recovery in the same way as the other.

Since these cases were reported I have operated a third time. The last case I showed to the gentlemen who were at the hospital this morning. The man, who is now twenty-six years of age, had been having attacks at long intervals since he was thirteen years of age. For four months previous to this operation he had been confined to bed by the lameness, and had lost flesh and was without appetite. He was transferred to the surgical wards, and I operated upon him. In connection with the case, I want to mention a fact which I think is well recognized by operators, and that is the very great difficulty which sometimes arises in finding the appendix. Dr. Homans has made the observation that the appendix may be found by following down the longitudinal bands upon the large intestine. That is the first rule, and the only rule I know of. Dr. Fitz, Dr. Warren, and Dr. Shattuck were present at the operation that I speak of, and I could not find, nor could any one else of those present find, anything which would lead to the appendix in this case, and I had the cæcum in my hand. It was almost decided that a little knob on the cæcum must be taken as an abnormal appendix, and we had not found the cause of the trouble. I said, "We have looked everywhere where it should be, let us look where it ought not to be." By lifting the cæcum further up towards the crest of the ilium, lifting that up till it was turned up from its bed, there lay the appendix, nearly as large as my finger. It was so long that one of the gentlemen present made the observation that the kidney came down and touched the appendix. That was dug out and ligated in the ordinary way and treated as the other. A number have spoken about the difficulty in finding the appendix.

In connection with this, I want to go back to the case that Dr. Homans reported, where he removed the appendix in an acute attack, after a number of subacute attacks. I am especially interested in this case, because in the last attack before Dr. Homans operated I had him in my care. I decided that he should be operated upon, and the young man consented. In my endeavor to furnish my class with cases, I assigned this case to one of the students, and he unfortunately expressed to this young man the possible danger, although I had already told him the dangers; and the young man the next morning had decided that he would not have it done. When he came back with an attack so acute that he was operated upon, I felt that he might die because of the attack, and I felt that if that young man died probably his death was at my door, and I followed him with more interest than any other case that I had at the hospital during my service while he was under Dr. Homans's care.

Now I am to confine myself to the subject of recurrent appendicitis. This last winter I read a paper before the Medical Society, and at that time I was enabled to find fifteen cases, including my own. I knew, however, that there were a number of other cases that had not been reported, in the hands of the different surgeons here in Boston; and one of my class, in writing on the subject, had found twenty cases. We have not got any very large number from which to generalize with regard to which are the suitable cases, but it

seems to me that any man or woman or child who is invalided for any considerable length of time, who is unable to follow the ordinary avocations of life from constantly recurring attacks of appendicitis, after being told what the dangers are, should be offered the relief of an operation; that those people who are obliged to travel; who are obliged to go away from the place where they can get good surgical aid, should be operated upon in the remission between the attacks; and it is especially to these two classes of cases that the operation should be limited.

With regard to the dangers, every one of the fifteen cases that I found recovered. Now I know by hearsay, but have not seen it in publication, that there are cases that have died from this operation. That must go without saying, that a laparotomy cannot end in complete recovery in every instance, no matter how carefully done or by whom. Against this operation it has been urged that ventral hernia sometimes follows, and that a man's last estate is worse than his first. It is well recognized that all surgeons open the abdomen at times as a mere means of diagnosis, and in cases where the disease is not threatening to life, and where there is not so good an opportunity to relieve as in these cases, so that it seems to me that the question of ventral hernia could not be considered; and not only that, but a man who thoroughly appreciates the best methods of closing the wounds will close his peritoneal surfaces first, then his muscular tissues second, and the skin last; and in that way he has made a wound which is as near proof against ventral hernia as human skill can make it, it seems to me.

Secondly, if a person must come for operation, how much better if he might come in the remission between the attacks, when you have not a purulent wound to deal with, but you can do everything with the greatest antiseptic precautions, and carry out every detail of asepsis, closing the wound throughout. You don't have to leave a drainage-tube in, which certainly, to my mind, could be nothing more than forming a diverticulum through which a hernia might find its way.

Now it seems to me that these are important points in connection with the operation in the remission between the attacks, and I feel sure that the surgical mind is growing toward the line of operating. If you are in doubt whether to operate or not I believe that the proper thing is to operate, and that it is a good deal better to give the patient the benefit of the doubt than to take it yourself.

(To be continued.)

Recent Literature.

Sexual Neurasthenia (Nervous Exhaustion): Its Hygiene, Causes, Symptoms and Treatment, with a Chapter on Diet for the Nervous. By GEORGE M. BEARD, A.M., M.D. Posthumous manuscript, edited by A. D. ROCKWELL, A.M., M.D. Third edition, with formulas. 8vo, pp. xi, 282. New York: E. B. Treat. 1891.

In the present edition of this work Dr. Rockwell has added various suggestions in the way of the treatment of the conditions described by electricity, and has added various formulæ. As the work is already familiar to the profession, an extended notice is unnecessary.

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EVOLUTION OF MEDICAL SCIENCE OUT OF THE MEDIÆVAL VIEW.

UNDER the title of "New Chapters in the Warfare of Science," Dr. Andrew White, ex-president of Cornell University, has thrown together from various sources, an interesting and instructive sketch [1] of the struggles which medical progress has had to maintain against the theological spirit, tracing the evolution of medical science out of the mediæval view and its modern survivals. Everywhere for centuries he finds cropping out the feeling among ecclesiastical authorities that, with the abundance of supernatural means, there was something irreligious in seeking cure of disease by natural means. In Scripture, King Asa trusted to physicians rather than to the priests of Jahveh, and *so* died. St. Bernard declared that monks who took medicine were guilty of conduct unbecoming to religion. The School of Salerno was held in aversion by strict churchmen, since it prescribed rules for diet, thereby indicating a belief that diseases arose from natural causes and not from the malice of the devil. Pope Innocent III, early in the thirteenth century, forbade physicians, under pain of excommunication, to undertake medical treatment without calling in ecclesiastical advice.

From this feeling grew the classification of scientific students generally with sorcerers and magic-mongers, from whence the proverb, "Ubi sunt tres medici ibi sunt duo athei." As a result, the study of medicine was largely confined to the lowest order of practitioners, and subsequently to the Jews.

From the same feeling developed the doctrine of Signatures: that the Almighty must have set his sign upon the various means of curing disease which He has provided — a doctrine which in practice survives in the cosmetic use of bear's grease, originally considered a desirable application for baldness, as coming from an animal thickly covered with hair.

The enormous development of miracles, continuing century after century, which changed a natural and laudable veneration for the relics of martyrs into pure

[1] Popular Science Monthly, May and June, 1891.

fetichism, provided the church with a means of treating disease which she considered far better than scientific methods in medicine; and hence a cause of hostility. Why seek to build up scientific medicine, when relics, pilgrimages, sacred observances and the King's touch were curing hosts of sick people in all parts of Europe and England! The theological views of what the body *ought* to be, as exemplified by the missing rib and the hypothetical bone serving for the necessary nucleus of the human body for resurrection purposes, were hostile to and incompatible with the study of anatomy as prosecuted by Vesalius and drove him to exile and death.

The same spirit crops up later in Boston, in the opposition to Boylston's introduction of inoculation, notwithstanding the support he received from the Mathers and others, which averred that the small-pox "is a judgment of God on the sins of the people and to avert it, is to provoke him more"; that inoculation is an encroachment on the prerogatives of Jehovah, whose right it is to wound and smite. The same sentiment, one hundred and twenty-four years later, faced the Board of Health of Montreal during the small-pox epidemic of 1885.

In 1591, a lady of rank, charged with seeking aid for the relief of pain at the time of the birth of her two sons, was burned alive on the Castle Hill of Edinburgh.

In 1847 Sir James Simpson's use of chloroform as an anæsthetic in obstetrical cases, was denounced from pulpit after pulpit, as impious and contrary to Holy Writ, the ordinary declaration being that its use was "to avoid one part of the primeval curse on woman." Finally, in desperation, Simpson brought to his aid the twenty-first verse of the second chapter of Genesis, as the record of the first surgical operation ever performed, in which the text proves that the Maker of the universe, before he took the rib from Adam's side for the creation of Eve, "caused a deep sleep to fall on Adam." To this the theological spirit replied that the "deep sleep of Adam took place before the introduction of pain into the world — in a state of innocence." Simpson finally won his battle with the aid of Thomas Chalmers.

Dr. White thinks that the progress in medical science within the past twenty-five years has been vast indeed, but that the world is hardly beyond the beginning of medical discoveries. In three fields especially, according to his view, discoveries have been made which have done much to disperse the atmosphere of miracle: (1) in the greater knowledge regarding the relation between imagination and medicine; (2) in hypnotism; (3) in bacteriology. The theological view of disease has greatly faded, and the theological hold upon medical education been almost entirely relaxed.

Dr. White notes two main facts in summing up the long struggle between science and theology: First, that in proportion as the world approached the "Ages of Faith" it receded from ascertained truth; and in proportion as the world has receded from the "Ages of Faith," it has approached ascertained truth. Secondly, that in proportion as the grasp of theology upon education tightened, medicine declined; and in proportion as that grasp has relaxed, medicine has been developed. In this development, medical discoveries, sweeping away the belief in miracles, have cleared higher paths, not only for science, but also for religion.

ELIMINATION AND ITS USES IN PREVENTING AND CURING DISEASE.

The above was the title of the Cavendish Lecture, delivered June 12th, by Dr. T. Lauder Brunton. Particular emphasis was placed on the importance of free elimination by the bowels. Not only the brain, but the heart, lungs, liver, stomach and kidneys have their functions impaired when the bowels cease to do their duty. Napoleon's disaster at the battle of Leipzig is popularly set down to his having eaten a bun in a hurry, and so brought on dyspepsia; but it would be a very curious page of history if we could learn how many wars, how much bloodshed, and how much cruelty have had their origin in imperfect action of the bowels. Washington Irving, in his "Lives of the Caliphs," tells of a certain emir named Al Hejagi, who suffered for many years from dyspepsia and abdominal pains, and this wretched man distinguished himself, perhaps above all other rulers who ever lived, in the enormous number of people whom he sentenced to imprisonment and death. He is said to have caused the death of no less than 120,000 persons, besides those who fell in battle, and to have left 50,000 in prison when he died himself. How much of all this misery might have been averted by the judicious use of mild aperients, it is as impossible for any one now to tell, as it is to estimate the debt of gratitude which Europe owes to the physician of Louis XIV for the care he took of the bowels of that august monarch.

In mitral disease and in dropsy, either cardiac or renal, the benefit derived from the free use of the compound jalap powder is very great; and in his work on "Purgative Medicines," Dr. Hamilton describes most forcibly the advantages he obtained from purgatives employed in such a way as merely to clear the bowels, not to produce violent purging, in typhus fever, malaria, scarlet fever, hysteria, chorea and tetanus.

Most persons can regulate their bowels by exercise and diet, but these sometimes fail, and we must have recourse to so-called aperients. The dinner-pill supplies a very useful stimulus, and Dr. Brunton knows a man who has taken one every day of his life for forty years, apparently with great benefit to himself. But there are some people who do not seem to thrive on dinner-pills, and they either do not get any action at all, or they get too much. In such cases, instead of giving the intestines one great push once a day by the dinner-pill, one may give them a series of gentle jogs by adding to each meal a minute quantity of a purgative; and Dr. Brunton has found that one-tenth of a grain of aloin given with each meal sometimes succeeds

when other means fail, and even these minute doses sometimes seem to be too much.

But many persons, besides the dinner-pill, require a weekly clear-out; and if this be not given to them by means of a cholagogue purgative, they have a regular sweep-out once a month by getting a violent migraine with bilious vomiting; and generally they are obliged to fast for at least one day during the continuance of the headache. The effect of a cholagogue purgative such as a mild mercurial, followed by some saline, is sometimes very remarkable. Dr. Brunton has seen a quarter of a grain of calomel, with a Seidlitz powder next morning, surprisingly change the temper of a sulky boy or girl; and he has more than once taken the "naughtiness" out of a peevish child by a dose of Gregory powder, which, being nasty to the taste, has both a moral effect and a physical action.

Not infrequently adults suffer from nervous irritability, depression, weakness, and inability to do anything; and this is often put down to neurasthenia and hypochondriasis. They are treated with nervine tonics and sedatives, change of scene, baths, etc., to little purpose; nervous and depressed they still remain. In some of these cases, we may notice a large amount of mucus in the motions, and sometimes there appear to be actual casts of the intestines, long membranous-looking shreds, apparently tubular in their character. This condition has been described by Dr. James Simpson, under the name of "membranous enteritis"; and it is not only usually said to be associated with hypochondriasis, but often it is looked upon as a consequence rather than the cause of the nervous condition which is its usual concomitant. But it is no use here to treat the nerves. If you wish for any good result, you must treat the bowels. In some, probably many cases, conditions depends upon partial constriction of the intestine near the junction of the sigmoid flexure with the rectum. The motions, lodging here, cause an inflammatory condition of the mucous membrane and profuse secretion of mucus, which either simply coats the fæcal matters, or forms a kind of false membrane. In adults, prolapse of the sigmoid flexure into the rectum may give rise to great nervous disturbance lasting for years, unless its existence be suspected and the proper treatment adopted. One useful remedy is the injection of two to four ounces of cold water immediately after a motion. This is to be retained, and has the tonic effect of a cold bath on the intestine, increasing the contractile power and lessening the tendency to prolapse. In all cases of this kind the regular use of suitable laxatives should be enjoined.

Dr. Brunton, in the same lecture, urges the importance of maintaining a healthy state of the renal function, and speaks of the benefit in gouty and rheumatic cases, and in bilious colic, of making patients drink a big tumbler of water, and especially hot water, every morning, with or without some Carlsbad salts added to it, and, if necessary, repeating the hot water once or twice in the day.

MEDICAL NOTES.

A COMMENT ON THE ACCURACY OF VITAL STATISTICS. — The New York City Board of Health notified physicians that there was a neglect in reporting births. The result of the notice was an increase in births in two succeeding weeks of from 697 to 1,288.

RESIGNATION OF DR. RAUCH. — Dr. John H. Rauch's resignation as Secretary of the State Board of Health of Illinois was tendered and accepted at the meeting of the board held in Chicago, on June 30th. Dr. Rauch has been a member of the board since its organization, in 1877, during which time his work has been of national importance and utility.

INEBRIETY AND MEDICAL PRACTICE. — The Secretary of the State Board of Health of Iowa announces that he is convinced that habitual drunkenness constitutes "palpable evidence of incompetency," as the law reads, and that therefore the physician bound by inebriety should be deprived of his certificate entitling him to practice in that State.

THE PULSE-RATE AT DIFFERENT AGES. — Langlois has investigated this subject thoroughly, and gives the following results for the normal pulse: Between the ages of fourteen and forty-five the normal rate is very nearly 70 beats per minute. Below the age of fourteen the normal rate may be found by the formula $P = 140 - 5A$; the pulse-rate being represented by P, and the age by A. After the age of forty-five it is found by the formula $P = \frac{1}{2}(95 + A)$.

NEW MEDICAL PERIODICALS. — A bi-monthly journal, to be known as the *Vis Medicatrix* appeared for the first time in June. It is the journal of the Iowa State Medical Society, and will also have departments devoted to the treatment of animals and plants. It is published in Des Moines, under the editorial charge of Woods Hutchinson, M.D. *The Ophthalmic Record*, containing, besides articles on diseases of the eye, a department of laryngology, rhinology and otology appears this month in Nashville, Tenn. It is to be published monthly. A monthly journal entitled *Blätter für klinische Hydrotherapie* appeared for the first time in May. It is published in Vienna under the charge of Prof. Wilhelm Winternitz, and will be devoted to balneology and kindred subjects.

BOSTON AND NEW ENGLAND.

MORTALITY OF BOSTON. — The summary of vital statistics of the city of Boston for the six months ending June 30, 1891, as compared with the same period for 1890, shows the number of deaths in 1891 to be 4,982, against 5,155 in 1890. The number of cases of diphtheria have been 411, with 104 deaths in 1891, 976 cases and 258 deaths in 1890. Scarlet fever and typhoid fever have been nearly the same. There have been reported 2,423 cases of measles with 20 deaths in 1891, against 426 cases with 9 deaths in 1890. The small amount of diphtheria during the past year is

unprecedented. Consumption, pneumonia and heart disease also show a decrease in deaths. The statement of mortality for the month of June shows the number of deaths to be 736, with the death-rate per 1,000 at 19.23. Of those who died, 360 were males and 376 females; 216 were married and 394 single; 88 were widows and 32 widowers; 715 were white and 21 were colored. The number of children who died under one year of age, was 152. There were seven deaths due to alcoholism, 23 from cholera infantum, 16 by diphtheria, three from influenza, two from measles, four from typhoid fever, 27 from cancer, and 25 from tuberculosis.

Cottage Hospital in Dedham. — A charter has been granted to the Dedham Cottage Hospital, "for establishing and maintaining a cottage hospital for all the purposes for which such institutions are created," in the town of Dedham.

Typhoid Fever in Rhode Island. — An epidemic of typhoid fever, of considerable extent, is reported from Valley Falls, R. I. The first cases occurred in the middle of May.

NEW YORK.

Mortality in New York City. — The number of deaths reported in the city during the week ending July 4th was 922. This is an increase of 119 over the mortality of the preceding week, but is nearly 200 below the average for the corresponding week during the past five years. It represents an annual death-rate of 28.61 per 1,000 of the estimated population, as against 31.50 for the five-year computation. This favorable result is no doubt due in great measure to the cool weather that prevailed during the week. As it was, there were 240 deaths from diarrhœal diseases, and of 544 deaths of children under five years of age, 400 were in infants under one year. There was a notable decrease in the deaths from respiratory diseases, and also from contagious affections. Some of the figures are as follows: Pneumonia, 56; bronchitis, 22; phthisis, 72; measles, 16; scarlet fever, 24; diphtheria, 21. The mortality from typhoid fever was remarkably small, there being only two deaths from this cause.

City Board of Health. — The two months' service of the summer corps of fifty physicians of the Board of Health commenced on July 6th. They are required to spend eight hours a day in house-to-house visitation among the tenement population, which is divided into fifty districts, and to report twice a week to Dr. Moreau Morris, who is the director of this special work.

Execution by Electricity. — Although all the witnesses present at the execution of the four murderers at Sing Sing prison on the 7th of July were pledged to secrecy concerning the event, there can be no question that in every instance death was perfectly painless and instantaneous, and that the new electric method proved a complete success. Under the direction of Dr. Carlos F. McDonald, President of the State Commission in Lunacy, who had been asked by Governor Hill to supervise the executions, the electrodes were placed at the forehead and the calf of the leg, instead of at the top of the head and the lower extremity of the spine, as in the case of Kemmler.

University of the City of New York. — At the opening session of the twenty-ninth convocation of the regents of the University of the State of New York, held in Albany, July 8th, 9th and 10th, the president, Hon. George William Curtis, conferred the honorary degree of M.D. upon Herbert M. Dayfoot of Rochester, and John T. Talcott of Oswego. The principal subject discussed was the question, "Shall gymnastics be ranked as a study?" And among those who spoke in favor of athletics among students were President Hitchcock of Amherst College, President Webster of Union College, Dr. Luther Gulick of Springfield, Mass., and Dr. W. T. Harris.

Miscellany.

A METHOD OF CUTTING GLASS BOTTLES, TUBES, ETC.

Mr. Wm. Thomson[1] recently read some papers before the Society of Chemical Industry, one of which treated of this subject.

The method consists in having some strips of thick blotting paper at hand, from a quarter to half an inch in width, and of different lengths. Two pieces of such paper are wetted and wrapped around the bottle, tube, or other vessel to be cut, once or oftener (once is sufficient). These pieces of paper, cut true, are wrapped around the vessel like two bands. They must not be placed too close together — say from a quarter to three-eighths of an inch apart for larger vessels, and rather less than a quarter of an inch apart for tubes of an inch in diameter.

When this is arranged, a fine flame about two or three inches long is allowed to play on the glass between the two pieces of wet paper, the vessel being slowly revolved and the point of the flame kept between the two papers. Within a minute, usually, the vessel separates with a clean cut along the line against which the flame played. The blotting paper can then be removed and put aside for use on other occasions.

THE PART PLAYED BY MICROBES IN SUPPURATION.

In the course of a discussion at the recent French Congress of Surgery[2] on the different forms of suppuration, examined from bacteriological and clinical points of view, the following conclusions were laid down by M. Verneuil:[3] Microbes are necessary for pyogenesis, pus is the function of microbes; there are many known pyogenic microbes, but the number of these has not yet been made out; some are constantly pyogenic and nothing more, others seldom produce pus and are pre-eminently infective; the centres of

[1] American Druggist, June 1st.
[2] British Medical Journal, June 20th.
[3] Revue de Chirurgie, May.

suppuration are in some instances, mono-microbic, in others poly-microbic; in poly-microbic purulent centres there are three kinds of association — one of different agents that are all invariably pyogenic, another of invariable with occasional agents of suppuration, and a third of pyogenic with non-pyogenic agents; a purulent centre originally mono-microbic may become poly-microbic; a substitution of one kind of microbe for another kind may take place in a centre of suppuration; the collection of pus may become amicrobic, the pyogenic agent may disappear and the pus become sterile; microbes which engender pus pervade the whole region of suppuration; pyogenic microbes do not always excite suppuration nor at the time of invasion; the vitality of pyogenic microbes varies in the different forms — some disappear very quickly, others retain their vitality for almost indefinite periods; suppuration may in every instance be regarded as due to the presence of bacteria; the specificity of microbic agents being assumed, it becomes necessary to make out the specific action of each form of microbe. From these etiological conclusions one may readily deduce certain therapeutical indications: In cases of open suppuration, as, for instance, unhealed wounds and carbuncle, the treatment should consist in prolonged antiseptic baths, and in the application of antiseptic powders; if the suppuration be intradermic, as in lymphangitis and erysipelas, the application of antiseptic powders will suffice; if the suppuration be deep seated, one must penetrate into the collection in order to evacuate the pus and to sterilize it. Free incisions are useless; all that is necessary is to let out the pus through a small incision, and to replace it by a microbe-killing agent.

ST. VITUS DANCE.

AN outbreak of an epidemic of chorea in a school in Wildbad, reported[1] some months ago, recalls the dancing manias of the middle ages, which were at that time called the dances of St. John and St. Vitus.[2] Whether or not these outbreaks were of the same character on a large scale as the occasional outbreaks of chorea at the present day, or as the wild gestures and cries sometimes observed at religious revivals, it seems certain that with our present civilization wide spread epidemics are impossible.

In the year 1374 the dance of St. John assumed that severe and epidemic character which has made it memorable. In this year bands of men and women from different parts of Germany appeared at Aix-la-Chapelle. They paraded the streets, and besieged the churches. They joined hands, and, regardless of observers, indulged in the wildest gestures and the maddest dancing until they fell down in a state of exhaustion. They rolled upon the ground, foamed at the mouth and gnashed their teeth. They groaned as if in the agonies of death, and relief could only be obtained by tying a band tightly around the waist of the sufferer. The object of this was to relieve the tympanites, which was a prominent symptom, but other and more forcible methods, such as thumping and trampling upon the parts affected, were not uncommonly resorted to for the relief of this condition. While the dancing continued its votaries were in a state of ecstacy. They were oblivious of their surroundings, they saw signs and visions; to them the heavens were opened, and the Saviour enthroned with the Virgin become visible. From Aix-la-Chapelle the epidemic quickly spread over the Netherlands, and all the arts and rites of the Church were invoked against it.

It was forty years later that a similar epidemic broke out at Strasburg, and to this the name of the dance of St. Vitus was first applied. The name had reference to the fact that this saint was supposed to have special power in overcoming the disease, and his shrines in various places became the resort of the afflicted. The association of this saint with the affection was no doubt due to a legend, in all probability invented for the occasion. St. Vitus was a Sicilian who had suffered martyrdom in the fourth century, and, according to the legend which now became current, just as he bent his neck to the sword he prayed that he might protect from the dancing mania all who kept his commemoration day and fasted upon its eve. In answer to this a voice was heard to say, "Vitus, thy prayer is answered," and henceforth St. Vitus became the refuge and protector of all who suffered from this dancing mania.

[1] Lancet, January 30th.
[2] Ibid, March 21st.

THERAPEUTIC NOTES.

NEW REMEDIES FOR MALARIA. — Pambotano, a small tree growing in Mexico, was extolled by Valude, in 1889, as a remedy for malaria. Dr. A. E. Roussel, in a recent paper read before the Philadelphia County Medical Society, described his use of a decoction and an alcoholic elixir of the plant. His results were decidedly encouraging, although not as satisfactory as had been reported from abroad.

Dr. Capsus states[1] that in a hospital in Turkistan excellent results have been obtained in the treatment of all forms of malaria by sprays of the essence of cinnamon. Even cases which have resisted the action of quinine and arsenic improved in a few days under this treatment. The spraying is performed several times daily in the hospital wards, and is stated to be much more efficacious than a similar procedure with the essence of eucalyptus.

THE STINGS OF INSECTS. — The *Deutsche medicinische Wochenschrift* recommends rubbing the bites immediately with sea-water, or a solution of sea-salt.

Dr. Wm. A. Terry[2] has obtained good results by the application of fresh urine.

STRYCHNINE IN SNAKE-BITE. — Dr. Mueller, of Victoria, uses the following injection:

℞ Strychninæ nitratis . . . . 1 part.
Aquæ destil. . . . . 240 parts. M.
A little glycerin may be added.

Twenty minims of this solution are injected hypodermically, and the frequency of repetition depends upon the symptoms being more or less threatening, say from ten to twenty minutes. When all symptoms have disappeared, the first independent action of the strychnine is shown by slight muscular spasms, and then the injections must be discontinued, unless after a time the snake poison reasserts itself. The quantity of strychnine required in some cases has amounted to a grain or more within a few hours. Both poisons are thoroughly antagonistic, and no hesitation need be felt

[1] La Pratique Médicale, April 7th.
[2] Dietetic Gazette, June.

in pushing the use of the drug to quantities that would be fatal in the absence of snake poison.

Mouth Wash. — Dujardin-Beaumetz is said to recommend the following[3] to keep the teeth in good condition:

℞	Acidi carbolici		gr. xv.
	Acidi borici		3 vi.
	Thymol		gr. viii.
	Ol. menth. pip.		gtts. xx.
	Tinct. anisi		℥ iiss.
	Aquæ		O ij. M.

This should be mixed with an equal part of water, and used two or three times a day.

Von Gieth's Dressing for the Chest.—Parker[4] gives the details of Von Gieth's dressing for pneumonia and pleurisy. *Pure* olive oil (no other substance will be just as good) is poured in sufficient quantity into a previously warmed bowl, and a strip of soft cotton cloth, large enough to encircle the chest, is placed in the bowl and completely saturated with the oil. This is then applied to the patient's chest, and outside of it a second strip of dry cloth is placed, and, if necessary, a third, which completes the dressing. This application is said to be most acceptable to patients, and more successful in results than poultices, stupes or other local dressings more commonly in vogue.

Microscopic Preparations of Lung Tissue.—According to Dr. John Aulde a section of lung tissue may be prepared in the following way: It is thoroughly washed with water, then with alcohol and dealcoholized. A mixture of oil of cloves and oil of cedar, mixed in such proportions that a glass rod introduced into the mixture shows no angular refraction, is introduced into the lung tissue, and the whole covered with paraffine wax and a little resin, and then dipped into ice water. It can then be readily cut with a knife.

Correspondence.

EVIDENCE AS TO THE INJURIOUSNESS OF ARSENIC AS A DOMESTIC POISON.

Paris, June 24, 1891.

Mr. Editor:—I ask your permission to restate, in a somewhat different form, the substance of what I desired to emphasize particularly in the discussion of Dr. J. J. Putnam's excellent paper upon "The Character of the Evidence as to the Injuriousness of Arsenic as a Domestic Poison."[1]

Taking a large number of cases, it may be assumed that the gravity of the poisoning will be in proportion to the quantity of the poison absorbed, and statistics regarding *classes* of persons exposed in different degrees to arsenical poisoning will have more weight than reports of individual cases, and particularly when the legal responsibility of manufacturers is to be determined.

(1) Some mysterious cases have been reported in which poisoning has been attributed to an arsenical wall-paper covered by another paper free from arsenic. Here it is impossible to suppose that dust rubbed from the paper is the source of poisoning, and the formation of arsenuretted hydrogen has been suggested as the cause. The test for arsenic in arsenuretted hydrogen gas is of extreme delicacy; but thus far all attempts to obtain evidence of a formation of arsenuretted hydrogen from wall-paper have failed, and we must conclude that only infinitesimal quantities, if any, are given off by wall-paper. On the other hand, a class of persons is frequently exposed to quantities of arsenuretted hydrogen large enough to be readily detected. There are students engaged in tests for arsenic, and still more commonly, those who experiment with hydrogen made from impure metals, which usually contain arsenic; workmen who fill balloons, lime-light apparatus, etc., — these classes of persons are exposed to poisoning from arsenuretted hydrogen, if "imponderable" quantities of the gas are poisonous.

(2) Poisoning from arsenic in the form of arsenious acid. Physicians are in the habit of prescribing Fowler's Solution in minimum doses of three to six hundreths grain of arsenious acid per diem. Taking this quantity as a standard for comparison, it can be shown that the quantity of arsenious acid in the dust falling from an arsenical wall-paper, which could be inhaled by the inhabitant of a room, is one hundred or one thousand times less than the amount of arsenic, which is usually considered not poisonous in prescriptions of Fowler's Solution, because the inhabitant of a room avoids as far as possible breathing the dust. On the other hand, a house-maid is forced to do so, and more frequent cases of poisoning should be looked for among this class of persons.

(3) Another class of persons who are particularly exposed to breathing arsenical dust have not thus far been recognized by physicians as carrying on a dangerous occupation. The dust of chimney-flues has been lately found to contain large quantities of arsenious acid, — many thousand times more than the dust of a room with arsenical wall-paper. Even with the modern appliances, considerable quantities of this dust are inhaled by chimney-sweeps, and the frequency of poisoning should be investigated in this case. From the same source, the exposure to arsenical poisoning is much greater in certain towns where a bad quality of coal is burnt abundantly in open fireplaces, as is the custom in England or in Pennsylvania.

In conclusion, I would point out that medical diagnosis has thus far not led the way to the discovery of new sources of arsenical poisoning. Various forms of illness are attributed to this cause only since chemists have made known the presence of arsenic in certain fabrics. The extreme differences of susceptibility of individuals and the variety of the pathological symptoms make the medical evidence an uncertain guide. It is for this reason that I wish to insist upon the importance of collecting a larger body of statistics; and for one item, of pursuing further the inquiry into the relation between the prevalence of poisoning and the quantities of arsenic to which classes of persons are exposed. This mode of inquiry seems to be of special value where legislative enactments are in question.

Yours truly, J. M. Crafts.

[1] Journal, vol. cxxiv, pp. 623, 638.

[3] Union Med., May 9th.

[4] Medical News, May 9th.

METEOROLOGICAL RECORD,

For the week ending July 4, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...28	29.79	61	66	56	61	62	61	N.W.	N.W.	14	10	O.	O.	
M..29	29.80	65	75	55	70	70	70	W.	N.E.	12	11	O.	O.	†
T..30	29.96	60	64	56	78	81	80	N.E.	E.	9	9	O.	C.	
W. 1	30.08	65	73	57	75	82	78	S.E.	S.E.	5	8	C.	C.	
T.. 2	30.06	64	70	58	72	87	80	S.W.	S.W.	4	9	O.	O.	†
F.. 3	29.91	66	75	57	84	73	78	W.	S.	7	12	O.	C.	
S.. 4	29.76	69	78	60	87	54	69	S.W.	W.	11	10	O.	C.	.57
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 4, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	922	544	35.53	7.92	26.40	.22	3.52
Chicago	1,099,850	424	207	26.16	8.16	11.52	6.96	2.12
Philadelphia	1,046,964	452	223	28.82	9.02	22.00	2.64	2.20
Brooklyn	806,343	303	325	33.82	7.03	26.98	—	3.23
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	143	54	31.24	8.52	22.72	2.84	1.42
Baltimore	434,439	240	147	41.58	6.74	35.70	.42	1.68
Cincinnati	296,908	156	89	33.28	8.32	28.16	1.92	2.56
Cleveland	262,000	—	—	—	—	—	—	—
Pittsburg	240,000	141	82	31.24	8.52	22.72	2.84	1.42
Milwaukee	240,000	71	36	19.74	11.28	5.64	1.41	5.64
Washington	230,392	140	82	36.21	7.10	27.11	—	2.84
Nashville	76,168	41	21	34.16	9.76	24.40	4.88	—
Charleston	65,165	56	36	29.48	8.90	21.92	—	—
Portland	36,425	7	1	—	28.56	—	—	—
Worcester	84,655	14	11	21.42	7.14	21.42	—	—
Lowell	77,696	38	22	39.45	15.78	36.82	—	—
Fall River	74,398	—	—	—	—	—	—	—
Cambridge	70,028	23	7	4.35	26.10	—	—	—
Lynn	55,727	12	3	8.33	—	—	—	8.33
Lawrence	44,654	25	7	20.00	—	16.00	4.00	—
Springfield	44,179	13	2	7.69	30.76	7.69	—	—
New Bedford	40,733	13	4	23.07	15.38	23.07	—	—
Salem	30,801	8	2	25.00	—	—	12.50	12.50
Chelsea	27,909	13	5	—	15.38	—	—	—
Haverhill	27,412	9	3	55.55	11.11	—	—	55.55
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	6	2	33.33	16.66	16.66	—	—
Gloucester	24,651	2	0	—	—	—	—	—
Newton	24,379	7	1	—	14.28	—	—	—
Malden	23,031	6	1	—	33.33	—	—	—
Fitchburg	22,037	2	2	—	—	—	—	—
Waltham	18,707	6	1	—	16.66	—	—	—
Pittsfield	17,281	—	—	—	—	—	—	—
Quincy	16,723	5	2	20.00	—	—	—	20.00
Newburyport	13,947	6	2	16.66	33.33	—	—	16.66
Medford	11,079	—	—	—	—	—	—	—
Clinton	10,424	—	—	—	—	—	—	—
Hyde Park	10,193	1	1	—	—	—	—	—
Peabody	10,158	1	1	—	—	—	—	—

Deaths reported 3,506: under five years of age 2,026; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,089, consumption 305, acute lung diseases 244, diarrhœal diseases 800, diphtheria and croup 98, typhoid fever 57, scarlet fever 48, measles 33, whooping-cough 26, cerebro-spinal meningitis 18, malarial fever 6, erysipelas 3.

From scarlet fever New York 24, Brooklyn 7, Chicago and Philadelphia 5 each, Baltimore 3, Cincinnati, Milwaukee, Lowell and Cambridge 1 each. From measles New York 16, Brooklyn 7, Chicago 6, Pittsburgh 3, Charleston 1. From whooping-cough New York and Chicago 5 each, Philadelphia, Baltimore, Pittsburgh and Washington 3 each, Brooklyn 2, Milwaukee and Nashville 1 each. From cerebro-spinal meningitis Chicago 7, New York and Washington 3 each, Milwaukee 2, Philadelphia, Brooklyn and Taunton 1 each. From malarial fever Brooklyn and Baltimore 2 each, Nashville and Charleston 1 each. From erysipelas New York, Baltimore and Milwaukee 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending June 27th, the death-rate was 20.4. Deaths reported 3,680: acute diseases of the respiratory organs (London) 439, whooping-cough 117, measles 72, diarrhœa 64, diphtheria 36, fever 26, scarlet fever 24.

The death-rates ranged from 16.0 in Cardiff to 28.3 in Wolverhampton, Birmingham 23.5, Bradford 17.8, Hull 20.0, Leeds 18.8, Leicester 27.8, Liverpool 26.8, London 19.0, Manchester 23.9, Nottingham 17.9, Sheffield 18.1, Sunderland 19.5.

In Edinburgh 18.9, Glasgow 25.6, Dublin 17.9.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 4, 1891, TO JULY 10, 1891.

Assistant Surgeon JAMES W. BUELL is retired from active service, by reason of disability incident to the service.

Assistant Surgeon WILLIAM S. OWEN, JR., detailed to attend the encampments of the Illinois National Guard, near Springfield, Ill., from July 18 to 25, and August 11 to 18, 1891.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 11, 1891.

ROBERT BOYD, assistant surgeon, ordered to the U. S. R. S. "Dale," Washington, D. C.

SOCIETY NOTICES.

VERMONT STATE MEDICAL SOCIETY. — The annual meeting will be held in Burlington, October 15th and 16th. The President's Address will be delivered by Dr. J. N. Jenne, of St. Albans. The annual banquet will take place on Thursday evening, October 15th, after the President's Address, with Prof. J. H. Jackson, of Barre, as Anniversary Chairman. There will be the usual exhibit of drugs, medicines, surgical instruments and appliances, etc. The regular programme will be issued October 1st. D. C. HAWLEY, M.D., Burlington, *Secretary*.

AMERICAN PUBLIC HEALTH ASSOCIATION. — The nineteenth annual meeting will be held at Kansas City, October 20–23, 1891.

The executive committee have selected the following topics for consideration at said meeting: (1) Sanitary construction in house architecture; (*a*) heating, (*b*) lighting, (*c*) drainage, (*d*) ventilation. (2) Railroad sanitation. (3) Meat supplies. (4) Milk supplies of cities. (5) Arsenical papers and fabrics. (6) Isolation hospitals for infectious diseases in cities. (7) Papers upon any of the subjects upon which special committees have been appointed. (8) Papers on miscellaneous sanitary and hygienic subjects.

All communications relating to local matters should be addressed to E. R. Lewis, M.D., Chairman Local Committee of Arrangements, Kansas City, Mo.

Another circular will be issued before the meeting, giving transportation rates, hotel rates, etc.

Blank applications for membership can be obtained by addressing the Secretary or Chairman of the Local Committee of Arrangements. IRVING A. WATSON, *Secretary*.

APPOINTMENT.

William W. Gannett, M.D., has been appointed Visiting Physician at the Massachusetts General Hospital.

DEATHS.

WILLIAM W. JONES, M.D., of New York, died, July 11th, aged seventy-eight. He graduated from the College of Physicians and Surgeons in 1842. He was Visiting Physician to the Northern Dispensary, Attending Physician to St. Luke's Hospital, and Consulting Physician to the Nursery and Children's Hospital, and the New York Asylum for Lying-in Women.

ARTHUR E. Z. VINCELETTE, M.D., M.M.S.S., of Lowell, died in Quebec, July 3d, aged thirty-seven. He was born in the Province of Quebec, graduated from Laval University, and had practised in Lowell from 1883 until last year, when he went to Quebec, on account of his health.

DR. FRIEDRICH W. SCANZONI VON LICHTENFELS, Privy Councillor of the Kingdom of Bavaria, and Emeritus Professor in the University of Würzburg, died on June 12th, aged sixty-nine, after an illness which had lasted many years. He was a very active worker and writer. His great treatise on Midwifery first appeared forty years ago, and since that date he has written a text-book on Gynecology, which was translated into English (second-hand from the French) by Dr. Augustus K. Gardner, of New York, in 1861. Since that date he has written numerous monographs and contributions to medical journals and text-books.

BOOKS AND PAMPHLETS RECEIVED.

The Surgery of Cleft Palate. By M. B. Ricketts, M.D., Cincinnati, O. 1891.

The Social and Medical Aspects of Insanity. By John Punton, M.D., Kansas City, Mo.

Lectures on Tumors. By John B. Hamilton, M.D., LL.D. Detroit: George S. Davis. 1891.

Hygienic Conditions of Passenger Cars. By Granville P. Conn, M.D., Concord, N. H. Reprint. 1891.

The Indications for Early Laparotomy in Appendicitis. By William W. Keen, M.D., Philadelphia. Reprint. 1891.

Cancer of the Cervix Uteri in the Negress; with Pyo-Physometra. By Howard A Kelly, M.D., Professor of Gynecology in the Johns Hopkins University. Reprint. 1890.

The Steps of the Cæsarean Section: The Do's and the Don't's. By Howard A. Kelly, M.D., Professor in Gynecology to the Johns Hopkins University. New York: William Wood & Co. 1891.

Lecture.

NEURASTHENIA AND ITS MENTAL SYMPTOMS.[1]

THE SHATTUCK LECTURE FOR 1891.

BY EDWARD COWLES, M.D., SOMERVILLE.

(Continued from No. 3, page 52.)

Pathological Fatigue. — In contrast with these normal processes may be placed the picture of the unbalanced conditions of waste and repair, — of expenditure and storage of energy, — the conditions of pathological fatigue, or neurasthenia. In a recent paper, valuable for its concise analysis of the subject, Dana [13] has given a comprehensive definition. He says, "Neurasthenia is a morbid condition of the nervous system whose underlying characteristics are excessive irritability and weakness"; it is "a condition in which the nutrition of the nerve-cells is primarily at fault." Can these phenomena be accounted for in default of anatomical and pathological findings?

It has been shown how inseparably normal fatigue from the discharge of tissue energy is accompanied by toxic products that increase the fatigue. Now every action of the mechanism is considered as aroused by some definite cause or stimulus. Stimulation too soon repeated, without giving time for rest and repair, finds nerve-cells in fatigued areas, having less power to act because of inanition from deficient rest and nourishment; they are also hindered in action by the incomplete removal of the toxic products of previous action, — in other words, there is inanition and auto-intoxication. Then further assimilation is hindered, — first, by the lessened nutritive quality of the blood from non-eliminated toxic materials, — and second, by the probable toxic weakening of the cells' power to assimilate the nutrition that is furnished them. The development of a manifestly morbid condition may be very slow and insidious, or more rapid according as the balance of the processes of constructive and regressive metabolism is more or less on the side of weakness, exhaustion and impoverishment. In explaining the effect of this gradually failing elimination of the products of metamorphosis, acting as an irritating and exciting intoxication, Kowalewsky [14] says, "there will then be a condition of partial inanition of the exhausted portion of the central nervous system, while, in the same part, partial auto-intoxication is going on, and while the remainder of the organism is in its normal condition. The result of a partial inanition will be an increased excitability on the one side, and, on the other, a quick exhaustion of the nervous system; these are the constant characteristics of neurasthenia. Thus a locally limited over-strain of a certain part of the nervous system may lead to exhaustion and neurasthenia."

It has been easy to understand how the "nervous weakness" so essentially characteristic of neurasthenia, should be a logical result of "exhaustion" by overuse; here is not only further explanation of this, but the "excessive irritability" is accounted for; tissues, weak from partial inanition, and, under constant stimulation from toxic irritation, almost excited into action, are over-sensitive upon the addition of ordinary stimuli. It is a kind of "hair trigger" sensitiveness that amounts to hyperæsthesia.

The localized neurasthenic conditions being acquired in this way in an organism previously healthy, it is easy to see how "entire loss of strength in the whole nervous system" may come about, through its prolonged exercise without due intervals of rest. In the excess of nervous activity and of the metabolic processes, there appears to arise from the decomposition or "combustion" of tissues, a condition of general inanition from inability of nerve-cells to take up the nutriment and oxygen presented to them in the circulation. Kowalewsky describes this as a demand for oxygen in the whole organism, or oxygen-hunger. This tends to increase, by deprivation, the partial and local inanition; and obviously the blood may be charged with an excess of the products of regressive metamorphosis, through inefficiency of the eliminative processes, — often because of weakened innervation. Then, he says, there is general auto-intoxication which adds its influence to the limited and local neurasthenic condition that may have been previously established. From this reasoning we derive four principal factors that, as pathological conditions, operate in presenting the phenomena of neurasthenia, and make up its clinical picture: —

1. — Partial (local) inanition.
2. — Partial (local) auto-intoxication.
3. — General inanition.
4. — General auto-intoxication.

This leads to the conclusion that, in very many cases certainly, neurasthenia has its foundation amply accounted for. The condition of inanition and auto-intoxication, whether partial or general, may vary according to the presence of one or more of the factors and their different values in the particular case. The auto-intoxication will affect one mechanism, or organ, differently from another, according to the dissimilarity of structure and function; from different organs, or tissues, will come different kinds of toxic products, and their effect will vary also according to their amount. In anæmia, the general impoverishment of the blood, from its own diseases, will, of course, contribute to, and may initiate, both local and general neurasthenic conditions. Even when the blood-supply is ample there may be locally limited over-strain and nervous exhaustion, probably due in part to the inability to assimilate nutrition. The conclusion of this matter is that, in morbid conditions, nervous weakness from inanition, due to expended energy and lack of nutrition of the nervous system, has always joined to it the varied effects of auto-intoxication as a dual cause of neurasthenia.

The Etiology of Neurasthenia, — Primary, Secondary, and Hereditary. — The genesis of acquired neurasthenia in a healthy organism can thus probably be largely accounted for as a primary neurosis due to the immediate effects of over-strain, or a primary and toxic disorder of nutritional functions. The principle may be equally well applied to the secondary neurasthenias, — those consequent upon other diseases, each with its peculiar exhausting and toxic influences, as the essential feature of a general pathological diathesis. It is, as yet, impossible to say what the chemical action in cell-protoplasm may be that causes the increased excitability and quicker exhaustion of nerve tissue, when they are consequent upon the chronic auto-intoxication of rheumatic and gouty diathesis; but the transmission

[1] Delivered before the Massachusetts Medical Society, June 9, 1891.

[13] Art. Neurasthenia. The Post-Graduate, January, 1891.

[14] Centralblatt f. Nerven heilkunde, October, 1890.

of these diatheses by heredity we cannot doubt, nor that children inherit neuropathic and neurasthenic predispositions from rheumatic and gouty parents. The same is true of all the "constitutional" diseases. The transmission of the effects of nervous diseases, alcoholism, syphilis, etc., may sometimes be shown in structural changes and defects of the central nervous system, — sometimes, according to Arndt,[16] in permanent embryonic conditions from arrested development, but slightly demonstrable, and constituting the structural basis of hereditary neurasthenia. While this term may still be fittingly applied to those cases where there is only a predisposition to functional disturbances and disease of the nervous system, the close relationship of all these conditions to organic changes is apparent.

James J. Putnam,[16] in his study of the etiology of sclerosis of the spinal cord, notes the predisposition by neuropathic inheritance to degenerative change; the suggestion, by some pathological findings, of a strain of constitutional or developmental weakness; the general enfeeblement of the whole body through debilitating influences, as probably initial to a primary degeneration becoming relatively chronic; the increasing importance assumed by toxic influences like syphilis, lead, arsenic, etc., and their conjunction with conditions of simple impairment of nutrition as contributive; the influence of over-exertion with stimulation and sensory irritation inducing ganglionic exhaustion to a pathological degree, and the possible relation of acute to chronic local anæmia.

According to Klebs,[17] also, the most essential characteristic of all degeneration is the deposit in the tissue of substance derived from nutritive changes in the part. There are disturbances of assimilation caused either by the deposition of non-assimilable material or by a diminution of the power of assimilation of the tissue; and the material may originate in the part or be brought to it from without. As an example of this, fatty degeneration is one of the most frequent and important pathological conditions which occurs in conjunction with the protoplasmic structures and the deterioration of their functions. General fatty degenerations always arise from influences which are either of an infectious or toxic nature.

As to the processes of pure, real atrophy, Klebs says, we have to deal with two fundamentally different sorts of disturbances of nutrition, according as the necessary food is withheld from the parts, or the power to assimilate it is lessened. In the central nervous system, the frequency and significance of circulatory disturbance depend on the easy disturbance of the nervous elements in consequence of the withdrawal of nutrition. The mental functions may be greatly disturbed by even simple anæmias if continued a certain length of time. Probably material changes in the composition of the blood may aid in affording the local anæmia the time necessary for bringing about the process of atrophy. In favor of this is the connection of many acute mental disturbances with infectious diseases, and their occurrence after typhus, puerperal fever, and acute articular rheumatism.

Pathology of Neurasthenia. — These pathological considerations indicate the effects that may follow from such initial causes as cerebral fatigue, toxic influences, lessened power of assimilation, local anæmias, etc., in the easily disturbed nervous elements. As the greater includes the less, we must regard the initial functional weakness and irritability of acquired neurasthenia, proceeding from the same causes, as their milder manifestations. Inasmuch as the "constitutional" taint or diathesis may be transmitted, we know not how, certain conditions in the individual may be regarded as consequent upon it and consistent with clinical observations. It is conceivable that the inheritance includes no more than "a molecular or chemical variation" in the central nervous system as the essential basis of the predisposition in hereditary neurasthenia. This implies "an exhausted or changed nutritional power"[18] and it may affect any special system or organ, as the central nervous system, liver or kidneys.

The foregoing considerations lead to a more precise conception of neurasthenia as a pathological condition, which may be the outcome of normal activities of the organic mechanism simply carried to excess, and conceivable as a subtle, and perhaps but slight, departure from a normal state. The restoration of cell contents to a normal state, following the physical changes observed by Hodge in normal fatigue, might continuously fail of being quite complete; and the "molecular or chemical variation" would then become established as the condition of "exhausted or changed nutritional power."

Habit, Diathesis and Idiosyncrasy. — There are other considerations, relating to the effects observed as accompanying the physiological use of the bodily mechanism, that are of great importance here. They include as an active factor, constantly and profoundly influencing all the activities of the mechanism, the law of use and practice, constituting the law of habit; they also include diathesis and idiosyncrasy. These modifying factors, or conditions, are nearly allied and are not always discriminated.

In regard to the law of habit, the moment the organic mechanism is put in use the effect of the law may be observed. In the reflex action of the organism it is a familiar fact that nervous action tends to follow certain lines of conduction, along sensory and motor nerves, and through transforming centres traversed before under like conditions; this constitutes the "nervous circle," and suggests the analogy of "paths" in the nervous mechanism. The well-known effect of practice in the muscular mechanism conforms to the law of use; and it must be taken for granted that analogous processes of practice take place everywhere in the nervous system and its accessory organs.

After any nervous action a changed condition remains by which a repetition of the action is rendered easier, and in all processes dependent upon the nervous system there are after-effects which find their expression in what is called "practice."[19] According to Wundt, the molecular changes in which this practice consists being unknown, it still claims material after-effects, which continue at first, but with no practice gradually fall away, and do not consist in a continuation of the function itself, but in facilitating its repetition; the remaining molecular effects are to be thought of as functional dispositions. This functional disposition to repeat organic processes constitutes the law of habit.[20]

[16] Die Neurasthenie, 1885, p. 110.
[16] Jour. of Nerv. and Ment. Diseases, February, 1891.
[17] Die Allgem. Pathol. ii., pp. 54, 67 and 281, 286.

[18] Kowalewsky, loc. cit.
[19] See Radestock, Habit, trans. pp. 15-16.
[20] For further discussion of this subject see my article, "The Mechanism of Insanity." Am. Jour. of Insanity, April, 1891, p. 475.

The disposition must then be considered as consisting in a tendency of cell-contents to repeat the physical and chemical changes that occurred before, upon a repetition of the given stimulation. Thus use and practice are fundamental to the law of habit, and the conception of the "path of practice" in the nervous system implies ultimately the disposition of cells and cell-contents to repeat their processes in a such way as to constitute a habit; and through the effect of habit, there come to be paths of least resistance for the discharge of energy of nerve-cells.

The law of sensory and motor habit, in the lower centres of the mechanism, has a strictly physiological basis, and the process is a physiological one by which these neural habits are acquired, from the beginnings with the labored first efforts to the facility of the most automatic of reflex actions. As already stated a nerve-cell, or group of cells, receiving an impression is modified in some way, and retains an aptitude or disposition for reacting again in the same way. This being true, the same law applies to all the co-ordinations of centres, as groups of cells, which acquire dispositions to act together; whatever be their functions, they become associated in action, and the law of association is an extension of the law of habit that governs all neural activities. There is abundant evidence of such physiological association, not only between neural and muscular activities but between these and mental processes. This is true whether these processes are simply physiological and normal, or pathological in their nature. The effects of the laws of habit and association are most significant as to the evidence that during the acute stages of nervous and mental disorders, accidental changes in the play of nutrition, exhaustion, and toxic inhibition, disturb the wonted channels of nervous activity, and the currents may be arrested or diverted into new created paths. Such variations of molecular activity acquired by habit, also tend to remain as "after-effects" when the causes have passed away. The readiness with which such morbid neural habits may be acquired, and how intimate are the relations of mind and body in their influence upon each other, have been well shown by Tuke,[21] and by Weir Mitchell's descriptions of the mimicry of disease.[22] Prince[23] has also shown how these laws of habit and association should be extended, in his study of "associated neuroses and psychoses," in hysteria, neurasthenia, etc.

For these reasons the consideration of the constant influence of these laws of use, practice, habit, and association, should never be overlooked in the study of these disorders of physiological processes. The operation of these laws, when long continued, aids in inducing and perpetuating the changes, or "after-effects," which are conceived as something more than "dispositions" and not yet pathological, but as contributory and initial to such conditions and acting as "predispositions."

In normal conditions, native tendencies may become established in the individual by "education" of the nervous system through the operation of these laws. These are fundamental also to the theory of localization of cerebral functions, as the specialization of function of certain centres. The remarkable fact of the restitution of function after cortical injuries affords reason for believing that there is the formation of new paths in the remaining centres, by which they become "educated" to duties which they did not originally possess.[24]

The central and peripheral mechanisms are therefore to be regarded as alike having specific functions, both native and acquired, both being manifestations of the law of habit and the important principle that our nervous system, in its elementary parts, becomes educated to such specific functions. The study of the law of specific nerve energy, and its relations to the law of practice and habit, furnishes further important evidence, not only of the plastic and changing character of our organic mechanism when put in use, but of the fixedness given by habit to modes of action long in use, alike in health and disease. This reveals the potent influence of habit in all organic activities, whether physiological or pathological.

Native tendencies, when acquired and established, may come to be transmitted, appearing as a part of the hereditary endowment; then there is a significant analogy between them and the recognized morbid "predispositions" which must have been largely acquired through the same laws. It is well, therefore, in seeking for the pathology of neurasthenia, to take account of habit as an element both of neural conditions and predispositions. The force of habit tends to establish disordered activities by the direct operation of the law of practice in the irregular action. In the evil effects of "disuse," and the consequent loss of power, there is probably never complete disuse, and the effects of vicious and deficient practice are manifestations of the primary law of use. The recovery from chronic invalidism, through resumption of right practice, finds sometimes striking examples, as in "mind-cure," hypnotism, etc. These laws of use, practice, habit, and association in physiological processes, also help to an explanation of the clinical phenomena of apparent resistance to nutrition in confirmed neurasthenia. They cannot be ignored as contributive, and they are, perhaps, sometimes the sole cause of the underlying molecular variations in the nerve-cells, whose exhausted and changed nutritional power is thus maintained.

The relations of the diatheses to neurasthenia have been noted; great interest also attaches to the study of the more defined and limited tendencies known as idiosyncrasies,[25] which are innumerable in variety; everybody has them, and they are but rarely discriminated unless made prominent by their singularity and inconvenience. The well-known forms of idiosyncrasies against certain drugs, articles of food, poisons, etc., commonly regarded as constitutional and hereditary, are known to be sometimes suddenly acquired,[26] when there had been previous toleration, for example, in the use of chloral, quinine, tea, tobacco, etc. The changes in the organism induced by drug habits are of equal interest.

The relations of all these phenomena to molecular and chemical variations finds explanation in the newer views as to the physics and chemistry of cell activity. It is probably not too broad a conception of the law of habit to regard it as capable of inducing, in this way, and certainly as contributory to, both diatheses and idiosyncrasies. The views generally held of these

[21] Influence of the Mind upon the Body, 1884, 2d ed.
[22] Nervous Diseases, p. 50, et seq.
[23] Jour. Nerv. and Ment. Dis., May, 1891.
[24] James: Psychology, vol. i. pp. 24-30.
[25] See Hutchinson, Pedigree of Disease, 1884.
[26] Field: Art. Six Generic Drug Modifications. Boston Med. and Surg. Jour., June 26 and July 3, 1884.

conditions or results of activity lead us to regard them as representing tendencies to structural change. Habit, diatheses, and idiosyncrasy, may be characterized as principal elements of variation in the organic mechanism. In the direction of pathological change they describe conditions initial and antecedent to it, being themselves not structurally demonstrable, except as to some congenital peculiarities classed as idiosyncrasies. Habit, though primarily normal, must, as a functional *disposition* to repeat organic processes, increase the persisteney of the other two conditions. Diathesis is regarded as having always a pathological interpretation, and as being a *proclivity* [37] to some peculiar type of disease; it is both hereditary and acquired, and carries the idea of persistency, — but it is curable, and having a toxic element conforms to the conception of a molecular and chemical variation. Idiosyncrasy is assumed to depend upon some structural change, usually hereditary and not always tending to disease. But being sometimes acquired, and often existing as a susceptibility to toxic influences, this implies again the occurrence of variations, of the character already mentioned, that may be initial to pathological change. And these implied variations serve to account for the manifestations of an exhausted or changed nutritional power.

While our present knowledge of the pathological conditions in neurasthenia is unsatisfactory, even with the most logical of inferences, we have to study, with all the more care, the recognized influences at work in the genesis of this nervous disorder. In the study of neurasthenia it is of special importance to note that such individual tendencies and idiosyncrasies may become emphasized with the lowered tone of the nervous system, and increased susceptibility to toxic influences.

(To be continued.)

Original Articles.

PRELIMINARY REPORT ON THE CLINICAL USE OF TUBERCULIN.[1]

BY HAROLD C. ERNST, M.D.,
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(Continued from No. 3, page 58.)

CASE 21. Boston. Date of admission, February 2, 1891. Service of Dr. E. H. Bradford. Born in Sweden, thirty years old, single, machinist. Father died of "nervous disease," at fifty-eight. Disease has lasted for twelve years. At that time there was an amputation of the great toe of the left foot and two fingers of the left hand, for the same trouble as is now present. General health good; no loss of flesh; is fairly well developed; good strength and nutrition; fair appetite and sleep; heart and circulation negative; is troubled with dyspnœa; urine acid, 1023, normal color, no albumen; abdomen negative. Present disease commenced as a little pimple, two years ago. It heals apparently, and then breaks out again.

Examination showed an irregular-shaped ulceration of the skin on the left foot, over the distal extremity of the first metatarsal bone, unhealthy granulations covering an area the size of a half-dollar, and involving the stump resulting from the amputation of the great toe twelve years ago.

February 5th. The discharge is quite abundant, sero-purulent, almost of a gelatinous nature.

February 8th. Dose, .0012 gm.

April 9th. Dr. Sumner reports considerable improvement in all the signs, that is, that they are less marked, except that the vocal resonance is still decidedly increased. The ulceration of the toe is about two inches long and three-quarters of an inch broad, kidney shape; granulations are red, bleed easily, and present a hob-nail surface. Considerable discharge. Patient desires to go home, and is discharged, relieved.

Summary. — Number of injections, 21; amount used 127.6 mg.; highest dose, 12 mg.; highest temperature, 103.8°, after the fourth injection of 4.2 mg. Discharged, not relieved. (See Dr. Sumner's report of April 9th.)

CASE 22. Somerville. Admitted January 8, 1891. Service of Dr. C. B. Porter. Born in New England, forty years old, married, clerk. Excellent health until two years ago. Disease began with occasional pain in the right knee. General health good; in appearance well developed; fair strength; some emaciation; good appetite and sleep; temperature 98.4°; pulse 84; abdomen negative.

Two years ago had occasional pain in the right knee with some stiffness. In a few weeks noticed an enlargement of the joint, with pain, which was especially marked at night, and most severe on either side of the patella. The stiffness of the joint increased until six weeks ago, when he was obliged to use crutches. Eighteen months ago, found some small tumors in and below the right groin. Twelve months ago, the fingers of the right hand stiffened, and the patient noticed a swelling on the further side of the ribs, just above the joint. Has lost much flesh and strength in the last few years.

Examination shows the right knee slightly flexed, some sub-luxation. The joint shows general enlargement; decidedly resistant; small area of fluctuation on either side of the patella. Motion is limited to a few degrees of flexion and extension. Passive motion is not painful. No distinct tender spot. The patella is movable. The right groin and Scarpa's triangle is filled with moderately enlarged glands. The under-surface of the left forearm, just above the wrist, shows a prominent area, two and one-half inches by one and one-half inches in measurement, soft, fluctuating, not tender, the skin not reddened or indurated. The flexor tendons are evidently involved. The wrist circumference is six and one-half inches. The knee, above fourteen inches; over the patella, fifteen; below thirteen.

January 9th. Dose, .0015 gm. Chill at 8 P. M. Increased pain and swelling in the wrist, increased pain in the knee.

April 8th. Bacilli in the discharge No. 1., appearing in masses. Treatment omitted, for the purposes of this paper.

Summary. — Number of injections, 30; amount used 203.5 mg.; highest dose 16.8 mg.; highest temperature 103.6°, after the first injection of 1,5 mg. Discharged, not relieved; although power of left wrist and fingers is much increased and almost normal and there was a gain of eight pounds in weight. Is this a case of uneven activity of the material?

May 11th. Reported as being much worse. Has

[1] Read before the Boston Society for Medical Improvement, May 11, 1891.

[37] Hutchinson, op. cit.

not left the bed for two weeks. Has a cough, hoarseness of voice and some expectoration.

Case 23. East Cambridge. Admitted January 6, 1891. Service of Dr. F. C. Shattuck. Born in Ireland, eighteen years old, housework. Good family history; always well and strong. Disease began fifteen years ago, with a swelling of a cervical gland on the left side. Menstruation has been absent since coming to this country. Well developed; good strength; well nourished; good appetite and sleep; heart and circulation negative; temperature 100°; pulse 98; respiration 25; urine normal, acid, slight trace of albumen, sediment shows a little pus, a few vaginal or bladder cells; abdomen negative. At three years of age had an enlarged gland in the cervical region on the left, which was incised. Since then, from time to time, other glands in the neck have become swollen and suppurated, as shown by old cicatrices.

Examination shows a hard, indurated mass of swollen glands, under the angles of the jaw, and several large, red cicatrices of different ages on either side of the neck, and several old scars about the left clavicle. Examination was otherwise negative.

January 7th. Dose, .001 gm. Weight 138 pounds. No results noted.

March 7th. Dose, .012 gm. No reaction after.

Summary. — Number of injections, 22; amount used, 185.8 mg.; highest dose, 19.6 mg.; highest temperature, 104.2°, after the third injection. Discharged, relieved. The cervical glands had cicatrized, no discharge, and general condition better. A gain of eight pounds in weight.

Case 24. Boston. Admitted January 5, 1891. Service of Dr. F. C. Shattuck. Born in Ireland, forty-one years of age, married, fish peddler. Family history negative; of alcoholic habits. Chancre ten years ago. Rheumatism nine years ago. From eight to ten years has had every winter a hard cough. Debilitated appearance; poor strength and nutrition; fair appetite and sleep; skin normal, except on the hand; heart and circulation negative; pain about the shoulders; urine normal, acid, 1015, no albumen; right inguinal hernia; about one-half of the glands penis gone. Disease began two years ago, as the result of a cut from a bottle on the back of the right hand. The wound did not heal readily, and soon broke out in small white places and black specks. Has been treated in various out-patient departments — scraped, cauterized, etc., but always to return. Drs. Post, Bowen and White give the diagnosis of tuberculosis. Examination of the right hand shows a reddened, somewhat scaly, atrophied patch on the back, covering nearly the whole, with much induration.

January 7th. Dose, .0012 gm. No special general reaction. The hand is slightly swollen, increased hyperæmia, covering back of hand to the phalanges.

March 19th. Dose, .012 gm. Discharged for profanity.

Summary. — Number of injections, 23; amount used, 208.4 mg.; highest dose, 15 mg.; highest temperature, 100.8°, after the sixth injection of 7.2 mg. Discharged, not relieved.

Case 25. Shelburne Falls. Admitted December 29, 1890. Service of Dr. J. C. Warren. Born in Vermont, fifty-two years old, married, furniture-dealer. Disease began, about a month before admission, with the appearance of a small spot on the left side of the tongue. General health fair; appearance well developed; fair strength and nutrition; good appetite; heart and circulation negative; temperature 99.8°; pulse 100; slight cough in the morning.

Physical examination shows the existence of a spot on the left side of the tongue, which has enlarged, with pain, until it has reached the size of about one inch by two-thirds of an inch; it is near the tip, and the under side is apparently involved. On the under side there are several small, white ulcerations of like appearance to the side. A piece removed under cocaine, and sent to Dr. Whitney, shows bacilli and giant cells. Examination of the lungs, by Dr. Shattuck, showed fine, moist râles, heard on cough, both in the supra- and intra-clavicular region on the right side. The patient never knew he had any trouble in the lungs. A small abscess, about two by two centimetres, at the left margin of the anus on the left side, fluctuating and tender, and about one week old.

January 1, 1891. Dose, .0008 gm. Good sleep; bacilli in the sputum No. 8; tongue swelled and became tender; abscess near the anus was sore, swelled up and burst at eight P. M.

April 15th. Dose, .012 gm. Treatment omitted for a time.

Summary. — Number of injections, 45; amount used, 380.8 mg.; highest dose, 12 mg.; highest temperature, 101.4°, after the first injection of .8 mg. Not relieved.

April 29th. General condition good; weight, 149 pounds; bacilli in sputum, No. 7; tongue less swollen and less active than on 14th; no apparent discharge from it. Physical examination shows very slightly diminished resonance and a few medium and fine râles to the second rib on right below apex, a very few fine râles upon hard cough below the second rib; back, no signs. Discharged, not relieved. The tongue seemed to be certainly in a less active state at last examination. At first it apparently made very active steps towards healing, diminishing in size of nodule and infiltration about it.

Case 26. Boston. Admitted December 9, 1890. Service of Dr. Burrell. Born in Ireland, single, horseshoer. Had pleurisy two years ago. Sanitary surroundings good. Disease commenced two weeks ago, before admittance. General health fair; appearance anæmic; fair strength and nutrition; good appetite and sleep; skin, heart and circulation negative; suffers pain in the lesion; had an abscess of the ankle; diagnosis of tuberculosis. Was in the City Hospital last winter with a fracture of both bones of the left leg. Discharged on November 24, 1890. (Entered about the middle of November, for an injury to the ankle, two weeks old. In two days the plaster circular removed and a new one applied. Out on crutches.) The night following the new application, had great pain in the foot and ankle, and on the following two days. Patient had the plaster removed, and applied tincture of iodine, and then came to the hospital. Urine was turbid with urates, 1030, very acid, no albumen.

Examination showed the lower right leg swollen, tender and red, most marked in the foot, and extending nearly to the knee, but to a less degree. The treatment was side-splint and rest in bed.

January 4, 1891. General condition fair; appetite and sleep good; slight pain about the ankle. The same discharge persists about the ankle. There is much thickening.

January 10th. Dose, .0008 gm. The treatment begun at the patient's request. The circumference of the ankle, about one inch above the os calcis, eleven and one-quarter inches.

Examination of the discharge every other day. Bacilli were found once.

Opening below the external malleolus is closed in. There is now motion in the joint. The opening below the internal malleolus filled with healthy granulation. Is to be dressed every four or five days. Thomas's knee- and wire-splint for ankle: Discharged, relieved.

Summary.—Number of injections, 7; amount used, 32 mg.; highest dose, 10 mg. (Chart lost and temperature not obtainable.) Discharged, relieved. The bacilli were found once, and then not again.

CASE 27. Boston. Admitted December 31, 1890. Service of Dr. Bradford. Born in Boston, nine years old, Irish parentage. Poor appearance, strength, nutrition, appetite and sleep; heart and circulation negative; abdomen negative; no enlargement of the glands. Entered with sensitive left hip, and permanent flexion of 50°; no motion in the joint. Leg held by muscular spasm; abduction of 20°; no sign of abscess.

February 20, 1891. Dose, .0004 gm. General condition poor; emaciation marked; hip sensitive; abscess on the anterior surface of the thigh; sleeps much, but is fretful.

April 8th. Dose, .0048 gm. Treatment omitted for a time.

Summary. — Number of injections, 20; amount used, 60.5 mg.; highest dose, 4.8 mg.; highest temperature, 105°, springing from 97°, after the seventh injection of 2.4 mg., a rise of eight degrees. Discharged, relieved. General condition much improved; discharge from hip less.

CASE 28. South Boston. Admitted December 16, 1890. Service of Dr. Bradford. Born in Boston, eight years old, single, school-girl. No family history given. Disease commenced, May, 1890. General health poor. Poorly developed; poor strength, nutrition, appetite and sleep; lungs normal; abdomen normal. She has a corneal ulcer of the left eye. Was in the hospital in August, 1890; returned with the left hip flexed at 30°. No motion in the hip. Abscess in the left iliac fossa.

February 20, 1891. There is profuse discharge from sinus in hip. Motion shows flexion about 90°, abduction about 15°, rotation limited one-half. Glands enlarged on the left side of the neck, with a moderate amount of swelling. An old cicatrix just above the angle of the jaw. Ulcer of the cornea of the left eye, with marked photophobia and discharge.

February 20th. Dose, .0004 gm.

March 18th. Dose, .0048 gm. Discharge from the sinus much less, and of thinner consistency. A visible increase of flesh; the eye improving.

April 8th. Dose, .006 gm. Treatment temporarily omitted.

Summary. — Number of injections, 23; amount used, 83 mg.; highest dose, 6 mg.; highest temperature, 103°, after the fourth injection of 1.5 mg. Discharged, much relieved. Eye well. Cervical glands diminished. Hip less sensitive, and discharge much less. Is about on crutches.

CASE 29. Boston. Admitted November 12, 1890. Service of Drs. Gavin and Bradford. Born in Poland, twenty years old, single, laborer. Speaks no English. Typhus fever several months ago; since then has had pain in the wrist. Below the medium size; of good strength, nutrition, appetite and sleep; urine normal, very acid, 1020, no albumen. Enlarged wrist at the end of the radius, and apparently some of the carpal bones are enlarged. On the palmar surface, directly over the carpo-radial joint, is a granulating surface, which is about the size of a quarter-dollar, that looks as if it was the remains of an old ulcer. No pain or tenderness, and the fingers move freely.

December 14th. Incision over the lower end of the radius made, about four inches long. The end of the radius found soft and carious. One and one-half inches of the lower end was excised, and the bone curetted.

January 1, 1891. General condition good.

January 4th. Dose, .0008 gm. Slight headache; nausea; chill. Discharge increased in quantity; no bacilli in discharge.

April 3d. Pulse and temperature normal; no pain or tenderness; still in the hospital.

Summary.—Number of injections, 7; amount used, 20.4 mg.; highest dose, 6 mg.; highest temperature, 101.8°, after the third injection of 2 mg. Discharged, not relieved. (Dr. Bradford considers condition of wrist on opening, on March 27th, as evidence of improvement). Is doing extremely well now.

CASE 30. Dedham. Admitted January 5, 1891. Service of Dr. J. C. Warren. Born in Ireland, thirteen years old, single, school-girl. Family history good. Disease began five months ago, with a swelling of the thumb. General health good; well developed; poorly nourished; anæmic; good appetite and sleep; heart and circulation negative, and suffers from pain in the lesions; urine slightly pale, acid, 1014, no albumen; abdomen negative. Five months ago noticed that the right thumb was growing larger. A little later a swelling appeared between the fourth and fifth metacarpal bones at the distal end; slowly increased in size, accompanied with a slight amount of pain at times. In two or three months a sore came on the thumb, which repeatedly discharged and healed over again.

Physical examination negative. The right thumb is considerably enlarged, the skin red and indurated; but the thumb is not tender; one small ulcerated portion the size of the little finger-nail. Motion in the terminal joints is much impaired; between the fourth and fifth metacarpals an indurated mark; the skin not red or tender on pressure. At the base of the third toe of the left foot there is a thick, reddened area, with a crust one cubic centimetre in diameter.

January 7th. Dose, .0006 gm. A slight increase of temperature; no local change.

April 7th. Treatment omitted. Thumb amputated by Dr. Beach.

Summary. — Number of injections, 28; amount used, 125.4 mg.; highest dose, 7.8 mg.; highest temperature, 103.8°, after the eleventh injection of 4.8 mg. Discharged, not relieved by treatment.

April 29th. Patient at Convalescent Home at Waverley. General condition good.

CASE 31. Charlestown. Admitted December 29, 1890. Service of Dr. C. B. Porter. Born in Washington, twenty-three years old, single, shoemaker. Family history negative. Former history good. Date of commencement of the disease, five years ago; result of a bullet-wound. General health good; well devel-

oped; good strength, nutrition and appetite; fair sleep; normal skin; heart and circulation negative; pain in left elbow; stools negative; abdomen negative. Recovered from the bullet-wound, with perfect motion in the right elbow. Five months ago he perceived stiffness and pain in the right elbow, with a gradual limitation of motion. Swelling appeared on the outside of the joint about one month later; and shortly after, a sinus formed, discharging a sero-purulent fluid. This discharge has persisted.

Examination shows the right elbow region symmetrically swollen, circumference, twelve and one-half inches; of the left elbow, eleven inches. Joint immovable, and fixed at 140°, with the very slightest amount of flexion. Pronation and supination not possible. Swelling hard, fairly smooth, and not tender. Corresponding with the head of the radius, there is a sinus, which allows the probe to enter for three inches. There are two smaller sinuses, one above and one below. These discharge a small amount of grayish-yellow, watery fluid. Examination of the chest by Dr. Tarbell shows slight dulness at the left apex, harsh respiration a few fine, moist râles, with slightly increased voice-sounds over the dull area. Examination of the discharge from the sinus, negative.

January 1, 1891. Dose, .001 gm., followed by increased pain in the arm. On the next day the arm slightly fuller at the elbow, and the amount of discharge slightly increased in the night.

January 22d. Fluctuation at the elbow. Operation; ether. Incision showed no pus that could be evacuated; but the whole tissue was boggy and œdematous. Probe could pass into the joint, which was open and full of granulation.

February 7th. .0084 gm. Sent out because of insubordination. Abscess at the elbow broke with very much discharge.

February 24th. Returned for operation under ether by Dr. Porter. Excision of the elbow. Bones of the forearm especially disorganized. No new growth of tubercle could be found. All the sinuses were curetted.

March 1st. Main wound closing. Sinuses granulating well; no pus present.

March 15th. Dose, .006 gm. Sent out for insubordination.

Summary. — Number of injections, 22; amount used, 93.4 mg.; highest dose, 8.4 mg.; highest temperature, 104.2°, after the fourteenth injection of 6.6 mg. Discharged, not relieved.

(To be continued.)

THE CONDITION OF BODIES LONG BURIED.

BY WALTER H. HOLMES, M.D., WATERBURY, CONN.

The old cemetery in Waterbury, Conn., containing bodies buried from 1709 to 1867, having fallen into great neglect, and being situated near the centre of the city, was finally, by a vote of the authorities, made the site for a public library building. Disinterment of many of those who were buried there was begun on April 27, 1891. As opportunity rarely occurs on so large a scale for observing the condition of bodies buried so many years, I will state that of those I saw disinterred.

The first was that of a lady, thirty-eight years of age, who was buried in 1741. After digging some seven feet through a light sandy soil, a very thin layer of a dark-colored earth, very moist, was reached, which was what was left of the coffin and flesh and bones. No structural remnants were to be seen in this. None of the bones were to be found except some of the cranial bones, separated at their sutures, a few teeth, and considerable brown hair covering the parietal bones. The frontal bone was fairly perfect, showing clearly the orbits. Both parietal bones were found, nearly whole, and covered thickly with brittle brown hair. Parts of the upper jaw, with sound, excellent teeth still imbedded in them, still existed. The sternal end of one clavicle and the bodies of a few of the upper vertebræ, with one lamina of a dorsal vertebra, were the only remaining bones. All the bones were wet and heavy — much moister than the adjoining soil. The only traces of the coffin were two small pieces of wood, preserved by the nails that had passed through them, and rust-stained. On breaking one of them in two, the substance of the nail was seen to have disappeared, but its form was indicated by a long square tube of iron-rust. This cavity was filled with a watery fluid. The long persistence of the hair, showing apparently nearly its original color, seemed strange when nearly all the solid parts of the skeleton were gone.

The adjoining grave contained the remains of the husband, who died in 1759, aged forty-eight years, and was fully eight feet deep. This skeleton was in a far better state of preservation than the wife's. The femora, humeri, one tibia, the atlas and the entire skull (part of the face having been broken while digging it up), were found. The long bones being very heavy and almost dripping with moisture, though the soil was very dry. In both cases it was easy to see where the grave-diggers one hundred and fifty years ago had disturbed the earth; and the contrast between the earth that had been dug up and that adjoining it was marked.

Another grave that was of interest contained the body of a man aged one hundred and one, who died in 1866, and of his wife aged eighty-nine, who died some fourteen years before. His was one of the most recent burials, and the box and the enclosed coffin, though rotten, retained their shape fairly well. When it was opened the lower extremities could be seen their whole length, the trunk and head being covered with earth. The tarsal and metatarsal bones were well preserved and also the phalanges of the toes. The head was well covered with hair on the back, and a few scattered hairs were seen opposite the middle of the forehead in front, as is so often seen on bald heads. There was a heavy beard still adhering to the chin, and a black neckcloth with a tie in front in good preservation. There was no evidence of so great age in the joints, whose surfaces were smooth and normal. The neck of the thigh-bone left the shaft at a less acute angle than is seen in bones of younger persons, but the difference was not so marked as is often seen. The jaws of the wife were toothless, the lower jaw consequently very shallow. There was in front a very sharp-edged ridge inclining backward towards the mouth; and the ramus left the body at a very oblique angle; its end would hardly rise more than three-fourths of an inch from the horizontal if the jaw were laid on a table.

The roots of plants — there are now very few trees in the cemetery — were in most cases closely intertwined among the bones, holding them snugly together and resisting their being lifted, even in the deepest

graves. The skulls were in the older graves far better preserved than the rest of the bones, sometimes being about the only parts left. Teeth were found nearly perfect, and many of the older skulls had complete and polished sets of teeth even at an advanced age. One skull had a complete and perfect set except as they had been worn down on their grinding surfaces by many years' use on what was perhaps coarse food.

Another skeleton was that of a minister, eighty years of age, who had been buried for one hundred and thirty-six years, and who is said to have been the principal man in the town during his life. The skull and many of the long bones, especially the femora and humeri and many of the vertebræ were in most excellent preservation. The skull was perfect, even the delicate turbinated bones and thin walls of the orbit being whole. The skull is a remarkable one and is shown from two points of view; the skull of a mound-builder from the West being shown by its side for the sake of the contrast. It will be seen at once that the mound-builder's is an extreme example of the brachycephalic type, and the white man's of the dolichocephalic. The extreme length backwards from the foramen magnum is remarkable, by far the greater part of the occipital bone being nearly horizontal, and taking a sharp turn upward nearly at right angles at the occipital protuberance. The distance from the posterior edge of the foramen to the protuberance is two and a half inches; from the anterior edge to the alveolus of the incisor teeth is three and a half inches, so that the centre of the base of the skull is precisely at the anterior edge of the foramen. The hook at the lower ends of the inner pterygoid plates is very well developed, and the outer plates are very large in size, and at their base are two foramina on each, piercing the external plates from side to side. I have one other skull with the same excessive development of the external plates. The same peculiar formation is spoken of by Dr. Thomas Dwight in the JOURNAL of June 4, 1891, p. 555. The "foramen pterygospinosum" was present in my specimen, and another one nearly, but not quite complete, directly behind it. I found in one ear the malleus, incus and stapes, white and perfect. It seems strange that this very delicate little bone, the smallest in the body, could resist decay for one hundred and thirty-six years. The teeth in the upper jaw were all gone, but there was one large empty socket on the left side, from which a tooth probably dropped during disinterment. In the lower jaw were three teeth, one partly and one badly decayed. In the side view of the skull it can be seen that the forehead was not of unusual height, but the great length of the skull is remarkable. A little wisp of white hair is adherent to one side of the vault of the cranium. The sagittal suture and the upper part of the lambdoidal have disappeared except a very few traces, but for half an inch above the nasal bones remains of the suture that unites the two halves of the frontal bone are distinctly visible.

The axis has a peculiarity which may be due to ossification of the soft parts in old age. The articulating surface on the anterior face of the odontoid process is continued for nearly three-eighths of an inch above the rest of the process, forming a convex projection above it, like a shield or battlement. It is high enough to project considerably above the upper surface of the atlas when these bones are articulated, but during life the thickness of the cartilages covering the joints must have raised the atlas up even with the top of this shield. In the median line of the anterior arch of the atlas are two somewhat similar shields of bone or exostoses, lengthening the articular surface on the inner side of the arch both upward and downward. I saw nothing peculiar in the other vertebræ, but in two lumbar vertebræ of another man seventy-seven years of age; there was a large and broad concave, hook-shaped projection from the side of the body of the lower vertebra, into which was received a convex exostosis from the lower edge of the body of the vertebræ immediately above. This must have completely prevented any motion between the two bones. The upper pair of genial tubercles on the lower jaw of the skull, shown in the cut, are grown together into a long, sharply-pointed process which projected directly back into the tissues of the floor of the mouth.

The other skull is considered to be that of a mound-builder. It is almost the exact counterpart of the one figured in Squier and Davis's "Monuments of the Mississippi Valley" or Volume I of "Smithsonian Contributions to Knowledge." In the book the skull figured is said to be the only one known at that time to be a mound-builder's, and to have been exhumed from a mound made by that people. The skull shown in the cut in the JOURNAL is very white and quite brittle, the bones having lost nearly or quite all their animal matter. It is evidently of great age. It is owned by a gentleman in this town who has several old Indian skulls, including some found in Connecticut, and who is strongly of the impression that the skull shown here was bought from the collection of one of the writers of "Monuments of the Mississippi Valley," having been found after that book was published.

The bones of the bodies buried more recently, within forty or fifty years, are much better preserved. In many of these all of the bones were found, even the hand and foot bones, which seem to be among the first to disappear. In one case a silk dress was found, quite perfect. In the hair of female skulls the bone combs with which the hair was secured in the knot at the back have lasted very well. In graves fifty years old or thereabouts considerable portions of the coffins are found, but the coffin has always been crushed in by the pressure of the earth, and large portions of them have disappeared. Coffin plates last well and are legible even when many years old. In the graves twenty-five or thirty years old the coffin and its enclosing box are both found, though they are both considerably decayed.

Medical Progress.

RECENT PROGRESS IN THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M. D.

CORROSIVE SUBLIMATE AS A DISINFECTANT.[1]

EXPERIMENTS published by Dr. A. C. Abbott, made in the pathological laboratory of the Johns Hopkins Hospital, have a very practical bearing upon the value of corrosive sublimate as a germicide, and the results of these experiments lessen the high estimation in which this agent has been held by most investigators.

Dr. Abbott selected the staphylococcus pyogenes aureus for a series of experiments as to germicide power, in consequence of the importance of this subject to the surgeon. The tests hitherto made upon corrosive sublimate as a disinfectant have agreed in giving to it the first place in the list of these agents.

One method commonly employed in testing the value of any chemical substance as a disinfectant is to expose organisms dried upon bits of silk thread to its action for different lengths of time, and then, after removing and carefully washing the threads in water and alcohol, to place them in nutrient media at a favorable temperature and notice if any growth results from them. If no growth appears, the disinfection was presumably successful. Another common method is to mix fluid cultures of organisms with the disinfectant, and, after different intervals of time, a portion is taken from the mixture and placed in nutrient media just as in the other method.

[1] Johns Hopkins Bulletin, No. 12.

Now, in both of these methods it is easy to see that unless special precautions are taken a minute portion of sublimate may be carried along with the thread or drop into the medium which is to determine whether or not the organisms on the thread or in the drop still possess the power of growth. For organisms in their normal condition, — that is, those that have never been exposed to the action of a disinfectant, — the amount necessary to restrain growth, for certain disinfecting agents, is very small indeed; and for those organisms which have previously been exposed for a time to such agents, Geppert shows it is very much less.

In the case of the organism we are considering, Dr. Abbott finds the amount of sublimate necessary to prevent the growth of perfectly normal staphylococci to be one part of sublimate in 75,000 parts of the ordinary peptone bouillon, or 200,000 parts of bouillon without peptones. So that, if organisms which have been once exposed to stronger solutions of this salt (1 to 1000) require less than these amounts to inhibit their growth, it is plain that special precautions must be taken to prevent transportation of this minute trace into the nutrient medium which is to demonstrate whether or not the organisms are capable of development. The author gives in detail a series of experiments, and draws the following conclusions:

That under the most favorable conditions, a given amount of sublimate has the property of rendering inert only a certain number of individual organisms, — that is to say the process is a definite chemical one taking place between the protoplasm of the individual bacteria and the sublimate in the solution.

The disinfecting activity of the sublimate against organisms is profoundly influenced by the proportion of albuminous material contained in the medium in which the bacteria are present. It was found that the relation between the golden pyogenic staphylococci and sublimate is not a constant one, organisms from different sources and of different ages behaving differently when exposed to the same amount of the disinfectant for the same length of time.

Many of the results of previous experimenters, who have assigned to corrosive sublimate more powerful disinfectant properties against the staphylococci pyogenus aureus in cultures than the observations reported to this paper indicate, are attributable to the neglect of certain precautions now recognized as essential to the proper conduct of such experiments. At the present stage of our knowledge in this direction it is plain that for use in surgical practice the solutions of corrosive sublimate do not possess all the advantages hitherto attributed to them.

In regard to the employment of sublimate solutions upon wound-surfaces it is plain that there exists at least two serious objections: First, the albumen of the tissues and fluids of the body tends to diminish the strength of, or, indeed, renders entirely inert, the solution employed; and, second, the integrity of the tissues is materially injured by the application of this salt. The first objection cannot be met with certainty, for the surgeon possesses no means by which he can determine the amount of albuminous material with which his solutions are to come in contact, and in any case this large amount of albuminous material is an almost insuperable obstacle to complete disinfection with sublimate. He is, therefore, never in a position to say, *a priori*, that his efforts at disinfection of the wound are or are not successful.

During the past two years we have had sufficient evidence to lead us to believe that the normal tissues and fluids of the body possess the power of rendering inert many kinds of organisms which may have gained access to them. This function is therefore diminished, or, indeed, may be quite destroyed, by any agent which brings about alterations in the constitution of these tissues. We know that just such changes as those to which we refer are known to follow the application of sublimate solutions. It is plain, then, if we bring about in these tissues a condition of superficial necrosis, — the condition following upon the application of sublimate, — they are much less able to resist the inroads of infectious organisms than they would have been had they been left in their natural condition.

As a disinfectant, in the strict sense of the word, there are, perhaps, few substances which possess the property in a higher degree than does corrosive sublimate, but at the same time there is nothing which is employed for this purpose that requires greater care in its manipulation in order to obtain its best results, than does this salt. In practice its action is influenced by a number of conditions which it is difficult, if not quite impossible, to control.

For these reasons we seem hardly justified in continuing to give to it the first place in the list of substances which may be employed practically for the purpose of rendering harmless, materials containing the germs of infectious maladies.

ANTISEPTIC TREATMENT OF TYPHOID FEVER.[2]

In a lecture on this subject, at King's College Hospital, Dr. Yeo has called attention to the progress that the idea of an antiseptic treatment of typhoid fever is making amongst physicians in all parts of the world. He is unwilling in the present stage of our knowledge, to put too much stress upon any particular manner of carrying out this idea, as we have probably not arrived at the very best means for doing so. What he says about the application of the idea of antisepsis in typhoid fever by various practitioners is of interest.

Professor Petresco, Bucharest, has borne valuable testimony to the efficacy of naphthol. He had previously experimented with carbolic acid, salicylic acid, turpentine, benzoic acid, kairin, calomel, corrosive sublimate, and boric acid without any very favorable results. He then tried a saturated solution of sulphide of carbon, with which he was much better pleased; and lastly he tried naphthol, fifteen grains three times a day, and had results more favorable than with any other remedy; the rate of mortality was reduced, and the course of the disease favorably modified.

Dr. Clarke, of Bristol, used hydro-naphthol in five cases of typhoid fever, and all did well. It soon stopped the diarrhœa, and the stools lost their offensive odor. He gave from three to four grains every two hours, until the diarrhœa was checked, and then every three hours so long as there was fever.

Dr. Treissier, of Lyons, prefers a-naphthol for producing intestinal antisepsis in typhoid fever. He gives it in six-grain doses, combined with salicylate of bismuth, and he, at the same time, promotes free diuresis by cold water enemata. He also gives enemata of quinine and cinchona as an "antithermic tonic." He observed that as soon as intestinal antisepsis was established the urine became green, the temperature fell, the albuminuria disappeared, the spleen diminished in size, and the tongue became remarkably moist. Convalescence was very rapid. He considers that naphthol acts by sterilizing the bacterial products in the intestine.

Dr. Schwartz has demonstrated that naphthalene administered internally diminishes the number of bacilli in fæcal matter in the proportion of one-third to one-fourth. When its administration is discontinued, this proportion increases again. But naphthalene is not so safe or suitable an intestinal antiseptic as B-naphthol or x-naphthol.

Dr. W. H. Thompson, of the Roosevelt Hospital, New York, is an advocate of intestinal antisepsis in typhoid fever. He looks carefully after the food administered; he never gives milk undiluted, but always mixed with an equal quantity of lime water. He objects to beef-tea as setting up gastro-intestinal fermentation. He gives, also, ten grains of saccharated pepsin with ten minims of dilute hydrochloric acid every three hours, sometimes both medicines every two hours. He regards these as the best agents for the purposes of intestinal antisepsis.

Many physicians have recorded their approval of an initial laxative, and no doubt it is well, as there is no diarrhœa, to begin with one; we shall then have less hesitation in keeping the bowels quiet afterward. Indeed, it has been said, that "purgation and antisepsis are, to some extent, interchangeable terms." An aperient expels the poisonous ptomaines and other decomposing substances from the intestinal canal, and, if given in the early stages, may actually prevent subsequent serious diarrhœa. But the use of aperients, to be perfectly safe, must be limited to the first ten or twelve days of the fever, the great risk attending their use in the later stages is the possibility of the existence of deep ulceration in the ileum, and, in that case, an aperient may mean the difference between life and death to the patient. At that period of the disease intestinal antisepsis can only be safely secured by the use of intestinal antiseptics.

OINTMENT FOR HEMORRHOIDS.[3]

℞	Hydroclorate of cocaine	grs. xvj.
	Sulphate of morphine	grs. v.
	Sulphate of atropine	grs. iv.
	Powdered tannin	grs. xvj.
	Vaseline	ʒj.
	Essence of rose	q. s.

Make an ointment and apply to the affected parts after each movement from the bowels. It is necessary to have the discharges of soft consistence.

HYDROCHLORATE OF PHENOCOLL, A NEW ANTIPYRETIC AND ANTI-RHEUMATIC.[4]

This substance appears in the form of a white powder soluble in water. It is a compound of phenetidine and seems to be similar in action to antipyrine. Fifteen grains of phenocoll reduces the temperature about as much as would be accomplished by twenty-two to thirty grains of antipyrine or about fifteen grains of phenacetine. It has analgesic properties in doses of seven to fifteen grains.

VEGETATIONS ON THE GENITALS.[5]

℞	Acid. salicylic.	grs. viij.
	Acid. acetic.	ʒij.

Apply to the warts with a camel's-hair brush once or twice a day.

[2] Lancet, No. 3529, 1891.

[3] Journal of the American Medical Association, 1891.

[4] Deutsche med. Wochenschrift, No. 15, 1891.

[5] Médecine Moderne, 1891.

METHODS FOR THE ADMINISTRATION OF AMYL-HYDRATE.[6]

A teaspoonful of amyl-hydrate may be taken at night in a small glass of beer. It should be stirred for several minutes to insure solution. Or, of the following, one half may be taken at night.

℞ Hydrate of amyl . . . . . ʒi.
Water, Orange-flower water, aa ʒij.
Syrup of bitter orange . . . . ʒj.

It is necessary to remember that amyl-hydrate dissolves slowly in water and beer (one part to eight).

Amyl-hydrate may also be taken in capsules, each one containing one-quarter of a drachm; three or four of these may be used for a dose.

AN ADDITION TO THE THERAPEUTICS OF EPILEPSY.[7]

Almost countless drugs and combinations of drugs have been used in the treatment of epilepsy, with the result that the various bromides, either singly or combined, have so far given the best results in relieving this distressing disease. Dr. Charles S. Potts has sought some drug which would be equally efficacious in lessening the number of epileptic seizures and at the same time not cause the disagreeable symptoms which may follow the persistent use of the bromides. With this end in view, various drugs, as antipyrine, antifebrin, and bromide of ammonium were separately tried, but with indifferent results until Dr. H. C. Wood suggested the use of antipyrine and bromide of ammonium in combination. Since then this mixture has been used with excellent results in the treatment of forty-three cases of idiopathic epilepsy. In none did it fail to cause marked amelioration of the symptoms, and in some it gave relief when all the other commonly-used remedies had failed, and in none has there been any indication of bromism, or of the disagreeable symptoms to which antipyrine sometimes gives rise.

For adults the dose, which is given three times a day, contains six grains of antipyrine and twenty grains of bromide of ammonium.

TREATMENT OF INGROWN NAIL.[8]

Dr. Pürckhauer moistens the surface of the diseased nail with a lukewarm forty-per-cent. solution of caustic potash, and then scraps off the softened upper layers with a sharp-edged piece of glass. After a second application of the potash solution the scraping is continued until the nail is as thin as a sheet of paper. It is then lifted up from the soft parts with forceps and the diseased parts are excised.

PREPARATION OF SACCHARIN.[9]

℞ Saccharin, ... 150 grs.
Bicarbonate of soda, ... 75 grs.
Distilled water, ... Oij.

One part of this solution is equivalent to two and one-half times as much sugar.

CHLOROFORM AND PHTHISIS.[10]

Dr. Samuel O. Potter reports that he has discovered a cure for tuberculosis in the almost continuous inhalation of chloroform. As a result of some experiments he feels convinced that this bacillus may be destroyed, and its victims saved, by the continuous use of chloroform inhalation systematically carried on, day by day, by means of suitable apparatus, and with the care necessary to prevent injurious results or accidental poisoning. It is not necessary to induce anæsthetic action, but the inhalation can be kept up continuously for several hours daily, and maintained short of general anæsthesia.

(To be continued.)

[6] Nouveaux Remèdes, No. 2, 1891.
[7] University Medical Magazine, No. 1, vol. iii, 1890.
[8] Therapeutic Gazette, No. 11, 1890.
[9] Nouveaux Remèdes, No. 19, 1890.
[10] New York Medical Record, November 1, 1890.

New Instruments.

TWO NEW VAGINAL SPECULA.[1]

BY WM. O. STILLMAN, A.M., M.D., ALBANY, N. Y.

In the use of the bivalve specula commonly employed in minor gynecological office work by the majority of physicians, several mechanical defects have annoyed me. The principal one of these has been that, in the case of virgins or women with small vaginal openings, it is often difficult to expand the speculum enough to freely discover the os externum without causing undue pain or perhaps lacerating the hymen. In other words, in order to expand the wings of the speculum sufficiently for practical purposes, it is necessary to dilate the ocular end of the instrument more than is really necessary to see well, or secure room for such instruments as are ordinarily used in office work, as the uterine probe, curette, forceps, applicator, caustic, etc. It has seemed to me that the vulvar part of the speculum might be made of a moderate, fixed size, and the blades be made to expand independently, or, at least, without affecting the selected calibre of the more external part. To do this I spent odd intervals during a couple of years, devising machinery, but it was either too complicated or defective mechanically. Finally, it occurred to me that by simply carrying the joint working the blades an inch further in, I could very readily accomplish my object. A double end was gained in this way with the simplest possible mechanism. Not only does the vulvar portion of the speculum not enlarge when opened, but a retracting motion is given to the upper blade as it opens, by its shorter radius, which seems to me a very important desideratum in constructing a bivalve speculum to be theoretically and practically a perfect instrument. This motion much more readily exposes the mouth of the womb.

It seems as if many of the designers of vaginal specula have labored under the delusion that the uterus is placed at the end and directly in the axis of a short, straight tube, fixed at right angles to the vulva. Their instruments, and they are common, open like a pair of dividers. The joint is directly in the line of juncture of the two blades and the upper blade is as long as the lower one, and usually pushes the uterus up out of sight behind it when it is opened. They ignore the fact that the womb is placed at about a right angle to the plane of the superior strait, while the vulva is nearly in the plane of the ischiopubic rami, two planes separated by a very wide angle. Sections of the frozen cadaver, and clinical experience have shown that the vagina is practically the segment of an arc, extending between the two planes just mentioned, and that the womb is frequently found at nearly right angles to the inner extremity of this arc, the pos-

[1] A paper read before the Albany County Medical Society, April 29, 1891.

terior wall of the vagina being longer than the anterior. As a concession to these anatomical facts many specula are now being made with the upper blade shorter than the lower one, a very desirable feature. But the retracting motion is very rare, although it works extremely well, usually, when found. This motion is well shown in an English speculum, purchased in London, which has been a favorite of mine. The joint is peculiarly placed as you will see, but the vaginal orifice is excessively expanded when it is opened widely.

Some specula found in the market are too narrow, and some too heavy; some are too big and clumsy, and some of the trivalves hurt or allow the vaginal vault to drop too low. Without devoting more time to what seem to me defects in other instruments, I will briefly summarize the practical improvements which I have endeavored to combine in these specula. In presenting the two, I will speak of the regular bivalve speculum first, and of the tubular bivalve later.

(1) I have sought to make it as simple as possible in its construction, and to render it aseptic it is made to come apart with the greatest ease.

(2) The vulvar part of the speculum is of a convenient size and does not enlarge on opening the speculum to its widest extent. On the contrary it becomes slightly smaller when fully expanded.

(3) The upper blade is shorter than the lower one, and working on a short radius retracts (so to speak) and exposes the womb very readily.

(4) The blades are broader at the free ends, so that a slight dilatation expands the vagina quite fully and prevents the folds of the canal from falling in at the sides and obstructing the view, as has been the case with me with one very slender speculum of a popular pattern. The breadth has been compensated for by excessive flatness when shut, to facilitate introduction, and the considerable height of the vulvar end is, on the other hand, compensated for by narrowing the instrument at that point, so that the calibre is not increased and yet a good view is obtained.

(5) It has been made light in weight, so as not to inconvenience by tilting or by pressing down on a sensitive hymen. Lightness is still further attained by the use of aluminum (one-third the weight of iron), which is, of course, non-corrosive (except to hydrochloric acid) and gives a pure white light by reflection, showing the correct colors of the parts revealed.

(6) To save tedious screwing and unscrewing in use, the set screw can be thrown in and out of its bearings, which also facilitates taking the instrument apart.

(7) An attempt has been made to adapt the shape of the instrument to the natural anatomical curve of the vagina, and it has been made quite wedge-shaped to assist in introduction.

I must acknowledge much courtesy and patience on the part of Messrs. George Tiemann & Co., the manufacturers of the specula, from whom they can be procured, in carrying out my ideas, which they have done very perfectly. For the best results this speculum should be made in sets of three sizes, the one shown representing the medium size.

The second speculum, which is simply an improvement on the well-known tubular ones — making it more easy of introduction, self-retaining, and giving a greater range of vision than usual — has many of the advantages of the first one, but is not aseptic. It works extremely well in practice, however.

Both of these specula have answered my requirements very well, and I can simply say in offering them for your inspection, that I have given them a trial of many months' duration, and that I do not think that they have the defects of which I complained, and from which perhaps some of those present have experienced annoyance.

I know it is much the fashion among specialists and many physicians, to rely almost wholly on the Sims speculum. The lack of office assistance makes this impracticable for the mass of physicians. Although I am never without an office assistant, I have found the bivalve speculum quicker, less liable to alter the normal relation of the parts, and in the majority of cases more satisfactory than the Sims, which is, of course, unequaled for many purposes.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. THE ONE HUNDRED AND TENTH ANNUAL MEETING.

BOSTON, JUNE 9 AND 10, 1891.

SECTION IN SURGERY.

(Continued from No. 3, page 66.)

DR. ALFRED WORCESTER, of Waltham, said: Mr. Chairman and gentleman, I believe the only advantage which I have over the other gentlemen present is that I have been through it myself. I have been very much gratified by what I have heard, and I certainly notice a great difference each year as to the treatment recommended by our first surgeons, and I am as certain in my own mind that we will have to wait but a few years before the right treatment will be laid down and applied, and that is to operate first, last and every time in the cases of appendicitis. When that was first broached, the necessity of operating in every case, it was laughed at by very nearly everybody, and now it is laid down for us that we should certainly operate in those cases which are going badly, perhaps, not in those that are going to recover, anyway; but, it is at the same time told us, that there is no possible way by which we can tell what cases are going to the bad. Now, whatever the percentage of cases treated medi-

cally, it certainly is not a large one; there certainly is a large per cent. that will not recover unless receiving surgical treatment; and of the class of cases that will recover only if surgical treatment is given, a very large proportion will recover only if that treatment is given early.

All the dangers of the operation, all the difficulties, all the dangers resulting afterward, do not apply if the operation is done at the outset of the disease. It is a very difficult thing indeed, every one admits, to save a case by operation where there is an indistinct abscess cavity and perhaps a general purulent peritonitis. You have heard it laid down this afternoon that, in general acute peritonitis there is no such thing as recovery. I am sure that I have seen such a case recover, where the abdomen was thoroughly washed out, where the appendix was in the pelvis, was found and was taken out, the stump was properly treated, and the patient recovered. But in cases at the outset, before the appendix is perforated, whether gangrenous or not, there is no such thing as disaster.

It is a simple operation, it is easy to find the appendix, there are no adhesions in the way, it is easily removed, the stump can be properly treated, and while I say that, I want to say that I do not believe it proper treatment to ligate it. It seems to me that that is unsurgical; it is not like ligating the Fallopian tube, it is like ligating a part of the bowel, and when the part separates, what is to hinder an escape of fæces? Of course, there may be resulting inflammation that will close it, but the proper way, it seems to me, is the treatment applicable to any other opening into the bowel, bringing the surfaces together. It is not easy to pull in the edges, but if the core of it is dug out by a V-shaped incision, the edges can be turned in easily. But this proper treatment of the stump can only be done when the operation is done early; it is not possible when you find the appendix ready to drop off as you touch it — it is not easy then to repair it properly. It seems to me that the reason why so many cases have proven fatal is, that the result has been lost sight of, that the bowel is really perforated. And what sense is there in leaving out of consideration the question of the integrity of the bowel? If the operation is done in the last stages of the disease, after three or four days, the sloughing appendix is fished out, and we depend on a rubber tube, let down into the abscess, near the stump, that is not any more sufficient than if we depended upon a drainage in the abdominal cavity by a tube running down somewhere near a perforation in the bowel. It is recognized, it seems to me, in every other variety of bowel wound, that it is necessary absolutely to close any perforations of the bowel before the abdominal walls are closed up. It seems to me that it is just as necessary here.

It seems to me that the main difference arises from the fact that appendicitis is claimed to be within the physician's province until a certain time, and that it is for him to decide when to call in the surgeon, and the surgeon comes and is relieved of the responsibility of the case; he is called either too early or too late. If you get him out too soon it is "too soon." If the patient dies it is "too late." Gentlemen, appendicitis must be treated by the surgeon from the first to the last; it is just as much a surgical disease, and entirely within his province, as any disease that can be thought of. There is no use in leaving the physician to decide when to call the surgeon in, for he will not call him in until he finds that he cannot save the patient himself. Sometimes the end of the first day is later than the end of the first week in other cases. It will not do to shift the responsibility upon the man who will be called the next day.

I want to point out one great advantage in the early operation, and that is that it is easier to diagnosticate the disease in the first twenty-four hours than at any subsequent time. All the symptoms are more apparent at first. After the belly is swollen out no man can diagnosticate the case, except by abdominal section; but, at first, when the abdomen is flat, when you can, by deep pressure, get all over the abdominal cavity, it is generally easy to decide whether it is a case of appendicitis or some simulating attack. And then the ease of operating, that is the thing that I want to impress. I would rather have appendicitis under the care of a country surgeon in the very end of the state, who was willing to operate the moment he recognized the disease. than to be under any of the surgeons who would not operate, although they recognized the disease early, because it is impossible to tell what cases are going to the bad. In the very worst cases of appendicitis, the patient in that condition will have a good pulse and temperature. Beginning collapse is not very easy to recognize. I have seen cases where you could hardly persuade the patient himself that he was very sick, where death was already stamped upon his face. So I say I would rather have the care of an experienced surgeon than to run my chances under a man who felt that by waiting he could tell the best time for operating. What does that mean? It is an easy operation, I am willing to admit, when the inflammation resulting from the perforating appendix is well walled off. But just think what slippery bricks that wall is made of. It is nothing more than coils of intestines. A cathartic will break that down. A little increased peristalsis will break the wall, and the pus is diffused. In some cases, of course, it is an easy operation to evacuate the pus, but after the pus is out fæces generally follow. That means that the integrity of the bowels is lost; it means that there will be recurrence, that there will be sloughing of the edges of the wound. If it is taken early it is just as clean an operation as if done between the attacks. It is easier if done in the first attack. There is great difficulty in the intervals between the attacks. There are adhesions everywhere. The appendix has sometimes not been found, and even if it is found it is quite a serious operation, for the adhesions have to be broken down; but in the very first attack there are no adhesions in the way, you can easily find the organ, you can treat the stump, you can close the wound without putting in a drainage-tube, and you can have the man at work in a few weeks' time, as I have had the pleasure of seeing.

We are asked how it is we have so many cases in Waltham. Perhaps it is that we do not have to sign our death certificates as peritonitis. We report our cases. Now, if any of us have operated so far in a case where there was no appendicitis, or where any injury resulted from the operation, then I admit we stand properly impeached. We have reported our cases, except our last dozen, for the last year, and they will be reported very soon. And when that is a record of cases operated on in the first twenty-four hours, and when we found that in some of them the appendix was gangrenous from the outset, and when

we report that out-patients are at work after a very short and sure convalescence, I think we have the right to hope that the time is not too far distant when what I said at the beginning will be held true, that the treatment of appendicitis belongs to the surgeon from the first; and in the great majority of cases the patient's chances will be better if he is operated on as soon as the diagnosis is made, and that being so, the duty rests upon every one of us to operate just as soon as the diagnosis is made.

DR. J. W. ELLIOT said: If any of you have any doubt that perforating appendicitis is like a bullet-wound in the intestines, you may be interested to see these appendices which I have excised within the last year: That appendix was sloughing out at the end of the fourth day. That had an opening in it very much like a bullet-wound; on the third day that patient had a purulent peritonitis. Here is another case, operated on the third day, with a sloughing, gangrenous appendix, which was wrapped up in the omentum, illustrating that phase of the disease. Here I pass around a case of chronic appendicitis. I will not report any of these cases, as they have all been reported.

Dr. Worcester certainly made a very strong plea for early operations, and I very nearly agree with him, but not quite. It seems to me it is the dread. We are all afraid of appendicitis when it begins. We do not know what will happen. We know that the cases are very dreadful. I think it is your instinct to operate immediately on every case, to avoid any disaster; but I am sure that the facts will not sustain that position. The third part of Dr. Fitz's cases recovered without operation. That is a very large number to be thrown out of consideration.

Last year I was called in consultation in private practice, in thirteen cases. Six of them were operated on; seven were not operated on; and all the seven recovered perfectly. All of those cases had serious symptoms. If a patient has a purulent gonorrhœal endometritis, there is great danger of salpingitis, perforation and death; but surely, that is not a reason for operating and removing the tubes. This is not intended to be a fair parallel, but it illustrates a point which I want to bring out later. What we want to do is to find out when we shall operate, and when we shall not, and what we shall do when we operate. I except all chronic cases, all old cases that are walled off; these will not come into consideration with me to-day. The question is, When shall we operate? As I said, one-third of the cases, according to Dr. Fitz, recover without operation. I have seen very severe forms of appendicitis, and am very much afraid of it; but there are certain mild cases which I see, which I feel confident from the start are not going to require operation, and usually do not. But if you make that general statement, some one who does not know what the symptoms are which should cause alarm will surely go wrong. Constitutional symptoms should be relied on. It is the cases with temperature under 100° and pulse under 100 which die for want of the operation. Now, I do not pretend to solve this problem, but there is one thing which I think helps me a great deal, and I think may help other people; and that is, it seems to me the difference between the old and the new surgery. In a very general way this difference is that the old surgery depends upon the general symptoms, the new upon what you find locally. It is skill in examining which has made great advance in the treatment of salpingitis, and operating as soon as we know that the dangerous local condition is present, before constitutional symptoms appear, that has made the difference.

Thus I hold that all symptoms which indicate that a local process has begun in the region of the appendix are to be very seriously considered, and almost always are a sufficient reason for operation. I should always operate in the presence of a tumor; I should always operate in the presence of general distention and tympanites; I should always operate in the presence of continued pain. Of course, when the constitutional symptoms are violent, they are often in combination with local symptoms. And violent constitutional symptoms should certainly be acted on. Yet constitutional symptoms, in my experience, are not so valuable as local symptoms.

I have had a case within a year where there was elevation of temperature, with only moderate local pain, with no distention. There was no question about the diagnosis. The temperature gradually fell to normal, there were never any symptoms of thickening, and the patient made a good recovery. On the other hand, I have had a patient with pulse and temperature practically normal on the third day, the abdomen rigid, expression that of a very sick person, where on operation a purulent peritonitis was found. Now Dr. Worcester wishes to lay it down as a general rule that it is better always to operate, but from the scientific point of view, that thirty per cent. must be taken into consideration, and what we want to do is to work out the symptoms, to get at the exact value of all the symptoms; and I am perfectly sure, that I can do a great deal more now, after experience in reading the symptoms, than I could three or four years ago. I should say then, not to operate on every case as soon as the diagnosis is made, but operate on every case as soon as any symptoms appear which are really threatening, and that from the point of view of one who has weighed carefully the value of symptoms.

DR. F. C. SHATTUCK said: I should like to protest somewhat, from the point of view of the physician, against the position that appendicitis is to be operated upon as soon as the diagnosis is made. Perhaps my experience has been unusually fortunate. It certainly has not been very large: but I have collected the cases which came under my care in the wards of the hospital in the last two or three years, fifteen in number — cases in which the diagnosis was clear. In these cases, most of them, consultations with my colleagues were held, so that the question of operation was not dismissed without consideration. In only four of these cases was operation done. These four all recovered. The other eleven that were not operated upon all recovered. It seems to me that we can divide the cases roughly into three categories. One class demands operation. In the second class there is no question of operation. In the third class are the doubtful cases. That doubt is a very serious one. These are the cases which arouse the greatest anxiety in the attendant. It seems to me that we must go wrong occasionally in these cases. Whether the contingent of accidents will be any larger from failure to operate where operation ought to be done, than from the results of the operation itself, where operation was not necessary, I do not know. Even in these days it is a serious thing to open the abdomen, and it seems to us that the surgeons who

have had the largest experience are those who are least willing to operate unless they are very certain that it is desirable.

Let me instance one or two cases which come under this class. One was a gentleman whom I saw within a few hours of the attack. He went into the hospital. I asked Dr. Cabot to see him with me. He had a tumor, well pronounced, and was pretty sick. On the ninth day, I think, Dr. Cabot made the remark, that if he were in the wards he would be operated upon. It was decided to wait a little, and the next day he was a trifle better, and he got entirely well without an operation. The tumor disappeared entirely, and he had had no trouble of any kind. That is one case. If the man had been in the ward he would have been operated upon. He was not, and he got entirely well.

A second case, which Dr. Warren and I had together. The patient entered on the medical side on the fourth day of the disease. On the tenth day she was transferred to the surgical side. Dr. Warren saw her almost daily before the transfer. She got rather better, and I think she was re-transferred a day or two later, only to be transferred once more. The operation was on the fifteenth day. She ought to have been operated on earlier. She got well.

Then, one private case, which I saw for the first time on the fifth day, — a boy of fifteen. The pulse was over 130; the temperature a little over 100°, vomiting; very ill. I asked for a surgical consultant immediately. After careful consideration it was decided not to operate that day, to wait until the next day. The boy seemed so sick that it did not seem that he could come out of it. On the next day he was better, and apparently became convalescent. I did not see him again until the tenth day. On the eleventh day I saw him, and he was operated on a few hours afterward. He had an enormous abscess in the side, and died a few hours after the operation. Yet there was a very careful consideration on the fifth day by a most competent surgeon. Some mistakes will be made inevitably. It seems to me that there is a pretty large proportion of cases that get well without operation; and I certainly am not prepared to say that the knife should follow immediately the diagnosis of appendicitis without the consideration of anything else.

Dr. S. H. Weeks, of Portland, Me., said: I consider myself very fortunate in hearing this discussion on this subject, in which I have had so much interest, by men of eminence and large experience. I must confess that it is apparent to me now that even here the full sunlight does not shine upon this important subject; we are not prepared to say that this method or that method is the best. I am satisfied that the early operation is not the best operation. Inasmuch as it is true, as you have heard here to-day, that a large number of patients with appendicitis recover without surgical operation, and inasmuch as we cannot at first decide what cases are to recover, we must wait until we are satisfied that this particular case demands the surgeon's knife. Furthermore, I believe that in the cases that require operation later on there is an advantage in waiting. There is an immense advantage in having a peritonitis which is circumscribed when the surgeon operates; and my first endeavor is to limit the inflammation, circumscribe the suppuration, and if I can secure that, if I can secure circumscribed peritonitis and circumscribed abscess, then, if I come to operation, my patient will very surely get well.

Now there are two different plans in the early stages. I do believe in the saline cathartics in the very beginning. I know from my own experience that thorough action of the saline cathartics, unloading the canal, relieving the bowels of the accumulation of gas and fæcal matter, does bring a tendency to circumscribe the inflammation, to limit the suppuration; and I also believe in the early application of leeches and then fomentations. It seems to me that this plan of treatment in the main is the best plan, and a plan which is applicable to all cases, — those cases that ultimately get well without an operation, and those cases that require the surgeon's knife later on. In the course of three or four days we are able to say what cases will get well, because those cases that get well without an operation at the end of three or four days begin to show signs of convalescence, and recovery gradually goes on. If at the end of that time the symptoms are no better, if there is a remission, then that is the time for the surgeon to step in.

One word with reference to the remark made by Dr. Worcester as to the opening in the appendix being the same as an opening in the intestines; it is not true. I am sure it is not true. What is the function of the appendix? It is simply a lubricator. It has no secretion. It is not a part of the intestinal canal as to its function. Fæcal matter does not circulate through the appendix, and when a foreign body is found there, it is not a grape seed or something which has found its way there; it is a concretion which has formed there, just as a billiary calculus is formed.

Now, with reference to the ligation of the appendix at the time of the operation, I pay but very little attention to it when I operate. I simply open the pus cavity, wash it out, and leave the appendix untouched, unless it happens to lie in the cavity where I can reach it. In no case has there been a fæcal fistula. This is the point: I think the opening into the appendix is very different from the opening into the intestine.

Dr. S. C. Gordon, of Portland, said: For the last two years I have had some convictions about the matter under discussion. That is a good deal to have in a matter of this kind. My convictions have amounted to substantially this: that we have been paying altogether too much attention to the appendix, that we are called to a condition, and that condition is one of peritonitis. Now for practical purposes I do not care what the cause of that peritonitis is, I am going to treat that peritonitis exactly as if I do not know what the cause was. My treatment has been purely the saline cathartics from the start. Suppose you remove that cause, you have not removed the condition. I think there is the mistake of the surgeon. "Only let us get at the cause." Medicine has been saying for thousands of years, "Remove the cause, and you have cured the disease." It is not true, it is all false; and surgery has done an immense deal of harm on this idea. An appendix producing appendicitis is no worse than a great many other things producing peritonitis. I do not care whether an appendix is the cause of the peritonitis. It is peritonitis that I am called for, and that I am going to treat by the modern approved method of treating peritonitis. The only wonder is that we did not do it fifty years ago. We did fifty years ago; but thirty years ago we began to be wiser, and Alonzo Clark ruled the medical and surgical

world. It is only such a man as Tait who had the courage to come out and say cathartics are the thing to treat peritonitis with. Therefore, I believe that if we will stick to the idea that we are called to treat a condition, we are going to save nine-tenths of the cases of appendicitis without operating.

No amount of medical or surgical treatment will save all patients. But if you are going to get a localized abscess, you are going to get an abscess with the walls of very much more integrity if you treat it by saline cathartics, if you unload the vessels; for you then have an abscess wall which has some vitality to it. If you have allowed that patient to go along without relieving the condition, if you have everything in the intestinal canal, your vessels are crowded and the tissues they supply die; but if you have unloaded the vessels and relieved all this congested and inflamed condition that you can, you are going to preserve the integrity of the exudate. When you have your abscess well defined, you need not hesitate; take your time to satisfy yourself that you have a localized abscess; take your time, and open it; take out your appendix, if you can; if you cannot, let it alone; drain the abscess; and I believe you are going to cure the cases that can be cured by operative surgery. This is my belief, this is my plan, this is my conviction. I think we have paid altogether too much attention to this appendix. It does no more harm than anything else. Therefore, I think it is the medical man who is going to treat peritonitis successfully, for he is going to use modern methods.

DR. H. O. MARCY, of Boston, said: I had little idea, sir, of saying anything. I think, in common with most of you, we have been very much interested in this subject in the last three or four years. One of the first subjects that I ever studied in medicine was the letter published under the title of "Another Letter to a Young Physician," written by Dr. Jackson. There we find clearly and carefully laid down many of the very factors which we are now discussing. I am reminded, however, by my friend, Dr. Gordon, of the discussions which occurred about fifty years ago in London, between Sir Benjamin Brodie and our famous Dr. Watson. Sir Benjamin asked Dr. Watson if he would have the kindness to give his opinion, and he said: "It is good surgery, sir, that we might remove the causes, and thus their effects may be taken care of."

I am also reminded of a discussion in Washington, a few days ago, when, after the surgeons had said a good many things, one of the company arose and said he wanted to tell his experience. He had a case of appendicitis recently, and he was in doubt, so he asked in a fellow-surgeon. He thought it wise to operate at once and within an hour the buggies of the three surgeons were at the door. Then a brother came upon the scene and refused to allow the operation until it should be determined that his sister was going to be sick. On the second day she was out.

I am delighted to find that my friends, Dr. Weeks and Dr. Gordon, take practical medical views, and yet it seems that we may discuss it a little more at length, for it really, after all, is not the ordinary condition that we call peritonitis. We have a local septicæmia, a local septic condition, which is going on first in that little organ, and it is owing to the result as to whether it shall remain or whether it shall become constitutional, that your patient recovers or dies.

I am sure, as I look over my history of twenty years or more of surgical watchfulness, I have seen such patients go to their deaths and the autopsy show that that patient ought to have recovered. My friend Dr. Worcester has pointed out that this is the fact. Within the last five years I have operated eight times and seven have recovered, and I cannot help thinking, had I not operated, that the result would have been far different. Formerly we saw these patients going to their death, and thought that we were doing all we ought to. Now let us see what takes place under modern surgery. We are able to tell you that at least nineteen cases out of twenty will recover if you take them in the condition where you can remove the appendix. If that is true, it is wiser practice, because the danger is less. Otherwise you are waiting for nature to do what she sometimes utterly fails to do, namely, to circumscribe the abscess. Our fathers knew how that should be cared for. Unfortunately there comes the time when the circumscription of the inflammation ceases, and where the first case I operated on showed clearly that I had waited forty-eight hours too long.

It is in just this class of cases, and in this only, that we want special light, and it is here our knowledge utterly fails, for we cannot tell when our inflammation is going to leave and where our danger lies. I should say, if I wanted to give my opinion in a word: If there is any doubt, give the patient the benefit of it, and operate. I have watched cases carefully and not operated; but there come cases where it is clearly your duty not to wait any longer, but to give the patient the benefit of modern surgery, and then we shall save a much larger percentage of our cases than we can do by saline cathartics or by waiting to see if nature herself is competent to do it.

DR. J. C. IRISH, of Lowell, said: I do not feel that I can add very much to this discussion. In all these appendices that have been presented here we can see that more or less tissue is necrotic. I do not see how it is possible for nature to care for those cases.

DR. G. W. GAY said: The brief remarks which I have to offer upon this subject are the results of experience. I do not wish to be dogmatic in my remarks, for there is yet much to be learned in this and allied affections. Experience tends to show that the majority of cases of non-traumatic peritonitis in the male are due to inflammation of the appendix. In the female, salpingitis, pelvic cellulitis, and kindred affections are to be considered in the etiology. Many cases of so-called "obstruction of the bowels," with peritonitis, have their origin in the appendix, and when seen late, should be treated as appendicitis, even if there be no localization of the symptoms. General peritonitis often begins as a local affection. The characteristic early symptoms may have been obscure, overlooked, or very likely have become masked by others before coming under the attention of a physician.

Localization of symptoms at any stage of the disease is of great importance as an indication of the character of the disease. The earlier these patients are seen, and the more closely they are watched, the more certain will be the diagnosis and the more intelligent will be the treatment. Pain in the belly, increased by coughing; tenderness, greater in the right lower quarter; and rigid abdominal muscles, more marked upon the right side, are among the most constant early symptoms of appendicitis. If the affection is located deep in the true pelvis, the rectal examination rather

than the vaginal will probably reveal its existence. Chills, fever, constipation of gas as well as of fæces, and prostration, all go to confirm the diagnosis of appendicitis or other serious lesions in the vicinity.

The symptoms of a true convalescence are easily recognized; but in many instances it is by no means easy to form a correct opinion of the patient's real condition, before that stage is reached.

Mild cases will often recover in a few weeks under the "expectant" treatment; that is, rest in bed, opiates, leeches, poultices or fomentations, and a judicious diet. Occasionally a case is met with in which the symptoms are threatening at first, but soon reach their climax, say in two or three days, and rapidly disappear, leaving the patient with only an occasional twinge to remind him of his trouble.

Operative measures are indicated under the following circumstances: Severe cases should be operated on in from two to five days, according to the urgency of the symptoms. If they are seen to grow worse every six to twelve hours, radical measures should be resorted to on the second or third day. Collapse generally means perforation of the appendix, and calls for immediate operation unless the patient's condition forbids it. Cases in which the symptoms are not very severe, but are steadily growing worse, had better be cut in about eight or ten days. Cases in which the symptoms are mild and stationary, not progressing in either direction, call for an operation in from two to four weeks. A recurrent attack not infrequently requires operation; and the more severe the previous illness, the earlier should radical measures be resorted to.

Chronic inflammation (catarrhal) of the appendix may not suppurate. Nevertheless, the symptoms may be very distressing and persistent, forcing the patient to lead the life of an invalid. The peculiar feature of these cases is that relapses are of frequent occurrence as a result of over-exertion or slight exposure. An operation for the removal of the appendix, similar to Tait's for the removal of an inflamed Fallopian tube and ovary, promises the most certain and permanent relief under these circumstances.

Cases of severe general peritonitis which have never been localized, as a rule, are unfavorable for operation. It is difficult, if not impossible, to thoroughly wash and drain the peritoneal cavity by reason of the numerous adhesions which form in a few hours. Under these circumstances, an operation probably has little, if any, effect upon the course and result of the affection. The surgeon, however, is not infrequently led to operate upon these cases from being called late to the patient, and from having insufficient knowledge of the earlier symptoms of the case to enable him to be reasonably sure of the character, and from the fact that the patients do recover under alarming conditions. And furthermore no other treatment offers any encouragement.

There is comparatively little danger in operating too early in the bad cases. There is far more danger in delay. Brief periods of improvement are oftentimes treacherous in these affections. In doubtful cases delay is justifiable, more especially if the patient is so situated that he can receive efficient aid at short notice. It is a question whether operators with the largest experience in the affections have not been more disappointed in the result of the expectant treatment than in the operation. Convalescence in the former is not infrequently long and tedious, and the recovery not satisfactory. Relapse and recurrence are also not infrequent under these circumstances.

The presence of a tumor or other localized symptoms is by no means essential to an operation. If the affection is located at the bottom of the iliac fossa, or deep in the pelvis alongside the rectum, no tumor need be expected to present to external manipulation until the collection of pus is very extensive.

Other things being equal, patients probably do better and make a more satisfactory recovery if the appendix, fæcal concretions, and other offending substances are removed at the time of the operation. A pretty thorough effort to this end should therefore be made in a majority of cases. Abscesses will not heal soundly while foreign bodies, — be they fæces, a gangrenous appendix, or not, — remain inside.

Little danger need be apprehended from pus in the peritoneal cavity, provided a free outlet be furnished. Not infrequently those abscesses have to be drained through a healthy peritoneum, and those cases do as well as any. In my efforts to find and remove the appendix, I have in several instances broken through the limiting wall of the abscess, and have thus far seen only an occasional local tenderness, which has always subsided in a few days. A peritoneum that has once protected itself under these circumstances can be trusted to do it again. If it will tolerate the product of inflammation, it will surely tolerate clean fingers and instruments, which are much less irritating.

In conclusion, I would say, the greater experience serves to strengthen my opinion, that, unless the surgeon has great grounds to suppose that the appendix is not at fault, he is justified in exploring that region by operation in every case of peritonitis which is in a dangerous state and is growing worse, and also those cases which do not show signs of recovery in a reasonable time, under other methods of treatment.

Dr. Wm. F. Whitney then made some remarks on the position of the appendix, its minute structure, and its pathology, illustrating the subject by lantern-slides made from photographs taken at the Harvard Medical School.

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, June 4, 1891, the President, A. L. Loomis, M.D., in the chair.

Dr. Richard Van Santvoord read a paper on

THE PATHOLOGY OF THE ECLAMPSIA AND ALBUMINURIA OF PREGNANCY.

In it he reviewed the various theories on the subject which have been proposed by different writers, and expressed his own conviction that the trouble was probably due to some form of toxæmia. In support of this view he related, in detail, a case of which he had made a very careful study. During two pregnancies the patient was threatened with trouble, but only once did this amount to actual eclampsia. About two months before her second confinement she was attacked with clonic convulsions attended with frothing at the mouth, but they were of very brief duration, and she passed through this labor, as she had her first, without any convulsive seizure whatever. The kidneys were evidently but very slightly affected, as the quantity of albumen in the urine was small and there were never any casts, while the organs readily responded to din-

retics. The specific gravity, however, was lower than normal, and the quantity of urea was small; though after each of her pregnancies the urine became normal in character. In this case there seemed to be a subacute cystitis. The lesson that such a case taught, he thought, was that in our apprehension of eclamptic trouble in pregnant women, we should not be guided too much by the presence of albumen in large or small quantities, but should watch carefully the quantity of urea in the urine and be on the lookout for symptoms of nervous disturbance.

DR. H. C. COE thought that cases of puerperal eclampsia were probably due to various causes, and that no one theory would satisfactorily explain them all. His attention had been particularly directed to the importance of pyelitis in this connection, and he had seen two fatal cases where this condition was found. He also spoke of the proneness of women of marked nervous temperament to eclampsia, and referred to the well-known fact that young unmarried women in maternity hospitals who suffered from great apprehension and mental depression on account of their condition were peculiarly liable to this trouble. Any serious diminution in the quantity of urine passed by a pregnant woman was always to be regarded as a sign of danger, and the house-staff in the maternity he attended were instructed to be constantly on the watch for such an occurrence in any of the patients awaiting confinement.

DR. W. T. LUSK said that the theory of reflex irritation seemed on the whole the most satisfactory to him, and the more that he studied the subject the more convinced did he become that it offered a solution of some difficulties that other theories could not explain. Thus, in regard to the supposed connection between the kidneys and eclampsia, it had long since been pointed out that convulsions sometimes occurred in cases where there was no albuminuria or any trouble whatever with the kidneys, and, on the other hand, that many women with serious renal disease passed through pregnancy and parturition without any sign of eclampsia. The reflex theory was also very useful in practice, and he believed that whenever convulsions came on or appeared imminent, the indication was to empty the uterus as promptly as possible. The remedies usually recommended, such as chloroform, chloral, veratrum viride, etc., were of service in securing a respite during which this might be accomplished, but the danger was that if they were continued too long they would lose their effect, and the patient would succumb. After the uterus had been emptied the convulsions usually subsided without giving further trouble.

The President having referred to the importance of high arterial tension in eclampsia, DR. VAN SANTVOORD said that the existence of such tension was generally recognized, and that the advocates of the toxic theory considered that it was due to the effect of the poison in the system, while those of the reflex theory believed it to be due to reflex irritation. As to the case which he had narrated in the paper, he did not think this could be satisfactorily explained by the latter theory.

A TEMPERANCE MEDICAL CONGRESS was held at Prohibition Park, Staten Island, July 15th and 16th, under the auspices of the American Medical Temperance Association.

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THE DISCUSSION ON ANÆSTHETICS AT GLASGOW.

THE action of anæsthetics is a subject of constant interest. Perhaps no therapeutic phenomenon has been so constantly debated and written upon since the introduction of surgical anæsthesia. But some very notable additions to the literature of the subject have been recently made, and the discussion in the Medico-Chirurgical Society of Glasgow, which occupied three sessions of the Society, the report of which has been recently issued, deserves attention.

The object of such a discussion, in the words of Dr. Joseph Coats, is to keep men's minds alive to the dangers incident to the use of anæsthetics, and to see whether, by the mutual comparison of experiences, we may be able to assist each other in avoiding these dangers. The immediate cause of the Glasgow discussion was the occurrence of a fatal case, and a proposal to regulate by law the administration of anæsthetics.

The discussion was participated in by advocates of ether and chloroform, and by others whose preferences seemed to be divided; but, if we may judge by the concluding remarks of the president, Dr. Macewen, individual opinions as to the relative value of these two substances, remained unchanged at the close of the discussion. The advocates of chloroform had certainly the advantage in point of numbers, but the claims of ether were ably represented by Dr. Hartly of Leeds, among others.

The discussion was practically limited to the respective values of ether and chloroform, though something was said as to the value of nitrous oxide for minor operations of short duration, and methylene found at least one advocate. The statements as to the comparative value of ether and chloroform vapors, as given by the physiologists or those who looked at the subject from the physiological and experimental side, were decidedly in favor of ether, as failing to show the depressing action of chloroform upon the heart. Dr. Coats puts the matter in few words, after a somewhat lengthy paper on the physiological details, as follows:

"I am firmly convinced, from multiplied experiments, that ether exercises much less of a paralyzing action on the intrinsic ganglia of the heart than chloroform does. . . . I do not know what is their relative action on the respiratory centres, but I suspect that in this respect also ether has the advantage over chloroform. So far as laboratory experiments are concerned, I believe that ether comes out distinctly better than chloroform, but I freely acknowledge that the matter cannot be arbitrarily decided by laboratory experiments. . . . If the superior safety of ether during the immediate administration is more than counterbalanced by the more serious after-effects, or by its inconveniences and difficulties during prolonged operations, then the scale will turn in favor of chloroform."

The advocates of ether seemed to prefer, as a rule, the use of some form of apparatus for its administration, and one reason for opposing its use as stated by Sir George MacLeod, was the assumed fact that it required an apparatus.

Statistics, so far as quoted, showed a much greater number of fatal results from chloroform than from ether, but the value of statistics was doubted by the chloroformists. One reason for their scepticism was the belief that deaths from ether occurred some days after operation from respiratory troubles directly due to the etherization, an imputation which was generally denied by the ether advocates. One speaker, however, quoted Dr. Woods's Berlin address, with approval, to the effect that "the ratio of deaths from chloroform is probably at least four or five times that of deaths from ether."

Sir George MacLeod spoke from thirty-five years' experience in anæsthetics, as he could recall the birth of anæsthesia. He freely admitted that anæsthetics did to some extent put the life of the patient in danger. In every case there is an element of risk. An anæsthetic should not be administered unnecessarily; but if an operation is required, there is more danger from shock than from its proper use.

There was expressed a certain general dread of primary chloroform syncope, which term is used to designate the form of sudden death most common under chloroform. In the language of Dr. Kirk, "it is beyond dispute that the majority of deaths from this agent have taken place in the early stages of the inhalation and in a somewhat sudden manner."

A marked difference of opinion was expressed as to the value of the preliminary administration of alcohol or morphia. By some alcohol was regarded as enabling the feeble to take the anæsthetic more easily and with less depression, while others seemed to regard it as highly deleterious.

Sir George MacLeod believed that "danger arose in most cases from want of experience in interpreting those small indications of the approach of danger, which could be learned only by long and careful observation. However invidious the statement might seem to be, he did not hesitate to assert that very few knew how properly to administer anæsthetics."

It seemed to be a common opinion that special pains should be taken to educate medical students to a practical knowledge of anæsthetics, such as would be attained by their repeated use under the supervision of an instructor; and the granting a diploma or certificate of proficiency to students so instructed, was a favorite idea.

On the whole, if very diverse opinions may be put together, it seemed to be the opinion that there was danger in the use of chloroform. There was an ill-concealed tendency on the part of some who had used it habitually for years without accident, to consider that improper administration was a possible cause of accident; others admitted a greater danger inherent in the drug itself; and one speaker (Dr. Beatson) wished the Society to make the declaration, "as a moral support to every one of us in our daily work when we have to deal with the drug," that at times chloroform, no matter how carefully administered, acts insidiously, and may cause sudden death by cardiac syncope.

One of the chief advantages to be gained from such a discussion is a stimulation to renewed interest in the clinical details of anæsthetization and any one who studies the report of the Glasgow meeting will be a more trustworthy anæsthetist, whether his favorite remedy be ether or chloroform.

LANNELONGUE'S NEW METHOD OF TREATMENT OF TUBERCULOSIS.

At the meeting of the Academy of Medicine, Paris, France, session of July 7th, Professor Lannelongue described his method of treating tuberculosis, founded on the substitution for the tuberculous neoplasm, of a compact, fibrous tissue which destroys the morbid tissue.

Lannelongue found, by experiments on animals, that chloride of zinc injected into a part produces a remarkable fibroid transformation in the normal tissues. On repeating these experiments in animals rendered tuberculous, the solution being injected outside of and around the tuberculous foci, the same results were obtained, a violent inflammation ensuing, which occasionally ended in abscess, but generally in a new formation of sclerous tissue, and even in disaggregation and absorption of caseous masses. Similar experiments have, with therapeutic intent, been tried during the past year on the human subject, for tuberculosis of the joints, bones, glands and lungs. Twenty-two such cases are reported, and the results in many of them appear to be excellent. All of these patients were under fifteen; twenty had been affected with osteo-arthritis of the limbs or vertebral column, or with tuberculous adenitis; two were victims of pulmonary tuberculosis, and bore the injections well. The latter cases are still under treatment, and no prognosis is yet ventured. In the twenty cases first mentioned, there is reported a manifest tendency to reparation. The benefits of the treatment were the most striking in

several patients formerly disabled and bedridden from fungous arthritis, who were able to be presented to this meeting. The joints had regained their normal form and functions, and walking could be performed with ease. Lannelongue thinks that if the bacillus still persists in the sclerosed tissues (a question not yet definitely decided), it is confined in a place where it is, as it were, encapsulated and inoffensive.

Lannelongue's method (called by him "sclerogenous method") is based on the principle of acting on the zone of tissues in propinquity to the tuberculous fungosities and neoplasms, that is, on the parts which contain the vessels which feed the tuberculous growth. It is easy, in most of the joints, to create nodular tissue, hard and compact, on the surface and in the fungosities. All that needs to be done, is to convey the chemical agent to the margin of the fungosities, and there deposit it, in the proper "dose," at the same time establishing a certain number of points of contact; the medicament diffuses itself considerably beyond the place of application.

He generally makes use of a ten per cent. solution of chloride of zinc, and deposits two or three drops at a determined point; the operation is repeated several times, either without removing the needle, its point being directed a little to one side, or by making several punctures. In operating about the knee-joint, for instance, with the view of substituting a fibrous for a fungous osteo-synovitis, an injection is made just above the upper cul-de-sac in such a manner as to deposit the solution upon the femur near the reflection of the fungous synovial membrane, and, if possible, under the periosteum. There are thus deposited deeply in four or five spots corresponding to as many punctures, about the circumference of the upper cul-de-sac, eight to ten drops of the solution. The injections at the sides of and below the ligamentum patellæ require more care; only about two drops should be injected and the needle should be made to penetrate the aponeurosis and engage in the superficial layer of the fungosities. A final injection is made parallel with the upper border of the epiphysis of the tibia; care should be taken not to penetrate the knee-joints, and it will not do to throw the injections immediately under the skin for fear of an eschar. When the injections are made deep, there is no danger of an eschar forming.

The one to ten solution is applicable to costal and iliac tuberculosis as well as to strumous adenitis. When the glands are the seat of caseous foci, the treatment provokes an irritation which leads to abscess.

Lannelongue thinks his treatment applicable to dry arthritis as well as to the fungous kind, and has tried it in one case of cancroid with immediate benefit; a relapse, however, soon took place.

At the same meeting, Leon Le Fort stated that as early as 1879 he had taught the possibility of modifying articular fungosities by means of interstitial or intra-articular injections of sulphate of zinc. He has noticed that around the focus of injection the fungosities became more consistent and after a while diminish in volume; in some cases he has obtained a cure. One of his patients, treated for fungosities of the knee, whom he, in 1879, presented to the Surgical Society, was able to walk well in consequence of this treatment. For the past twelve years, he has from time to time had recourse to this practice, and he has noted marked improvement in cases of white swelling, especially when the treatment was begun early. Often, however, the cure proved to be more apparent than real, and after a time the disease resumed its course. He is in the habit of using a one to ten solution sulphate of zinc, and of injecting from ten to twenty drops. Has never had any untoward results. He prefers, however, to the interstitial injections of sulphate of zinc, electrolytic punctures.

Lannelongue, in closing, replied to M. Le Fort; (1) That he had never used sulphate of zinc, believing the chloride to be a much more efficient agent; (2) That he had never employed interstitial injections; (3) That he condemns intra-articular injections.

NEW YORK STATE EXAMINATIONS IN MEDICINE.

ON July 11th, there was a conference at Albany of the three State Boards of Medical Examiners — Regular, Homœopathic and Eclectic — provided for by the new law enacted by the last Legislature. The object of the meeting was to discuss the details of the State examinations in medicine, which, after the 1st of September next, every new practitioner will be required to pass.

The chairman was empowered to appoint a Question Board of six members, to consist of two from each of the separate examining boards, for the purpose of preparing a syllabus in all departments of study except those of materia medica and therapeutics.

Four examinations were ordered to be held each year in the cities of Buffalo, Syracuse, Albany and New York, at times to be designated by the Board of Regents, after consultation with the faculties of the various medical institutions. It was also determined that examinations on all subjects should be held in the English language and at one time, and that all candidates must be graduates of medical colleges and have the degree of M.D. The conference then adjourned subject to the call of the chair.

Each of the three medical boards subsequently held separate meetings and arranged for permanent organization. The board of the Medical Society of the State of New York elected Dr. Wey, of Elmira, President, and Dr. Fowler, of Brooklyn, Secretary, and appointed them to represent the board on the Syllabus Committee.

MEDICAL NOTES.

A BUST OF HEBRA was unveiled on June 14th in the arcade of the University in Vienna. An address was delivered by Professor Kaposi.

Cholera is prevailing with considerable intensity in Abyssinia. Quarantine is in force against arrivals from the Gulf of Alexandretta, in view of the cholera at Aleppo.

A Worthy Institution. — An announcement appears in a Montana paper that Dr. H. F. Musser has recently opened a hospital, where the unfortunate rich can find excellent treatment and comfortable quarters.

Medical Law in Nebraska. — A law which goes into effect next month provides for a State board of Health, to consist of the governor, attorney-general and superintendent of public instruction, who shall appoint four secretaries, who shall be graduated physicians of at least seven years' practice. It is made unlawful for any person to practice medicine, surgery or obstetrics, or any of the branches thereof, in this State, without first having obtained and registered the certificate provided for by the act; and no person shall be entitled to the certificate provided for unless he shall be a graduate of a legally-chartered medical school or college in good standing; said qualifications to be determined by the board. The penalty for infringement of the law is a fine of not less than fifty nor more than three hundred dollars.

Population and Altitude. — Census Bulletin No. 89 shows how the population of the United States is distributed in accordance with altitude. About a sixth of the people live less than 100 feet above the sea level, more than three-fourths are found below 1000 feet, while 99 per cent. have their homes on planes below the level of 5,000 feet. These various proportions are accounted for by the callings of the people, whether commercial, agricultural or manufacturing. An indication of the drift of the people is found in the fact that between the levels of 5,000 and 6,000 feet the population is much in excess of that on the levels between 3,000 and 5,000 feet. This is largely owing to the density of the comparatively new settlements at the eastern base of the Rocky Mountains and in the Salt Lake valleys. A review of the conditions in 1870 and 1880 shows that the relative movement of the population has been steadily upwards, and it has been in the course of the two periods that the regions above named have been developed. The average elevation of the country is about 2,500 feet. The average of altitude of population has been as follows: In 1870, 687 feet; in 1880, 739 feet; in 1890, 788 feet.

Decline of Influenza in England. — The Registrar-General's mortality returns for the week ending July 4th, satisfactorily demonstrate that the influenza epidemic is rapidly subsiding. The total death-rate for London fell to 16.8, from 19 in the preceding week and 23 for the week ending June 20th. The deaths primarily attributed to influenza, which six weeks before amounted to 319, were only 56; and there has been a similar decline in the mortality from respiratory diseases, the decline in the death-rate has been tolerably general in all the large towns. Contrasted with that existing in the same places four weeks previously, in Birmingham it declined from 30.9 to 17.3; in Leicester, from 21.2 to 15.7; in Liverpool, from 31.4 to 20.2; in Manchester, from 29.1 to 23.1; and in Sheffield, from 22.9 to 17.5.

Nocturnal Enuresis. — A correspondent of the *Lancet* advises for this trouble that the old-fashioned remedy of a birch-rod be employed shortly before the boy is put to bed, six not severe strokes repeated for two or three nights at the outside will effect a cure. The birching should be regarded by all parties not as punishment for the past, but as treatment for the future — a very different thing. The *rationale*, he thinks, is (1) that it wakes up a desire to avoid wetting the bed; (2) that it draws the blood to the surface for a few hours, and thus relieves the pelvic organs; (3) that it stimulates the lumbar centre, controlling micturition through the nerves distributed to the upper gluteal region; and (4) that it prevents the patient lying on his back.

Cancer Inoculations. — It is reported by telegraph to the daily press that an excitement has been aroused in Berlin by the discovery that two eminent professors have been experimenting with inoculations of cancer on hospital patients without their knowledge or consent. They have selected such patients only as were past recovery. A similar scandal has recently been aroused in Paris. According to the *British Medical Journal*, the *Bulletin* of the Académie de Médecine, published on June 29th, contains the official report of a paper read by M. V. Cornil, at the meeting on June 23d. The facts of the case are, briefly, that *un chirurgien étranger*, who conceals his identity, took advantage of the insensibility of two patients, from each of whom he was removing a tumor of the breast, to graft a portion of each tumor into other, and apparently unaffected, parts of their bodies. He states that each of these grafts took effect; in one case the patient died, but not of the grafting; in the other case the patient was still living, at the time of the report four years ago, but she refused to undergo any further operation. This has been taken up by the daily press, apparently for sensational purposes.

Boston and New England.

Non-Admission of Immigrants. — Of the two hundred and thirty-two immigrants who recently came on the steamer *Michigan*, of the Warren line, twenty-eight were refused permission to land. These people are mostly Russian Jewish families, while a few of them are from Ireland and England.

The First Boston Board of Health. — The Board of Health has just had bound five volumes, the records of the board from 1799 to 1824. On the first page of the first volume is the call for the first meeting, which was called by members of the General Court, Hon. Thomas Daives and William Smith, who summoned representatives from all the wards in Boston. The meeting was held at Faneuil Hall on the 9th of March,

1799. Paul Revere was elected the first president, and John W. Folsom, secretary. A committee of three, consisting of Joseph Head, James Prince and Paul Revere, was elected on rules and regulations. The meeting then adjourned until the following Wednesday, when the house of Nathaniel Balch was the meeting place. The first two volumes were found in the City Hall about a year ago and the other three recently.

DELEGATES TO THE CONGRESS OF HYGIENE. — Governor Russell has designated as delegates from Massachusetts to the Seventh International Congress of Hygiene and Demography to be held in London, August 10th to 17th, Morrill Wyman, M.D., of Cambridge, and Samuel W. Abbot, M.D., of Boston.

LYNN HOSPITAL ADDITION. — A building to cost about $10,000 is soon to be erected. The present plan is for a cottage two and a half stories high, to be used entirely as an administration building.

NEW YORK.

BIRTH AND DEATH RATES.— During the week ending July 11th, there were reported in the city 957 deaths, against 922 for the preceding week. This is a decrease, however, compared with the mortality of the corresponding week for the past five years, which averaged 1,239. The death-rate was 29.68 per 1,000 of the population, as against 38.43 for the average of the corresponding week for the past five years. Five hundred and eighty-one of the deaths were in children under five years of age, and 449 of these in children under one year. The number of births during the week was 1,141, and this apparent increase is no doubt due in some measure to the special efforts which the Health Department has lately made to secure more complete returns of births from physicians and midwives.

ELECTROCUTION.—In connection with the certificates of the execution of the four criminals at Sing Sing, which the warden of the prison, in accordance with the new law, has forwarded to the County Clerk, there has now been published a report of observations made by Drs. Carlos F. McDonald and Samuel B. Ward, who served as the official physicians at the execution. This report is, in part, as follows :

"In each case unconciousness was produced instantaneously by the closure of the circuit, was complete, and persisted without interruption until the heart's action had entirely ceased and death had certainly occurred. In each case death was manifestly painless.

"In compliance with the statue, an autopsy was made in each case as soon as practical by Dr. Ira T. Van Giessen, of New York, in our presence and under our supervision, with the result of revealing the same gross changes in the blood and tissues previously observed in cases of death by the strong electric currents. Specimens, especially of the blood and of the nervous system, were taken by Dr. Van Giessen, for the purpose of careful microscopical examination, and the results will be forwarded to you as soon as such examinations are completed.

"In conclusion, allow us to congratulate you on the completeness in all their details of all your preliminary arrangements, on the uniform good order and decorum which prevailed during the trying ordeal, and on the resulting demonstration of the rapidity and painlessness of this method of inflicting the death penalty. The experience of to-day has proved to our satisfaction that this method is superior to any other yet devised."

STERILIZED MILK FOR THE POOR. — Sterilized milk is now being furnished to the poor on a large scale by the Eastern Dispensary on the East side of the city, and by the Greenwich Dispensary Association on the West side. A the latter institution, some of the milk, properly diluted and prepared for young infants, is supplied in feeding bottles, with directions for using blown in the bottles.

Miscellany.

MEDICO-LEGAL POINTS IN THE "FRENCHY" MURDER TRIAL.

THIS trial was extraordinary, not only on account of the peculiar nature of the crime, but on account of the character of the medico-legal evidence. The conviction of the prisoner was apparently largely due to the results of the chemical analysis of stains found on his person and clothing. The prisoner was indicted as George Frank. He was also known as "Frenchy." He was born on the northern coast of Africa. The nature of the crime was so suggestive of the work of "Jack the Ripper," that a remote possibility was suggested that he was indeed that well-known character. Dr. Austin Flint, one of the expert medical witnesses, has published what might be called a preliminary account of the case[1] the principal facts of which are as follows.

Shortly after midnight on the night of April 23–24, Carrie Brown, known as "Shakespeare," an abandoned woman, came to a low resort known as the East River Hotel, in the city of New York, and went to Room No. 31 with a man who was not the prisoner. This man disappeared during the night and has not been found up to the present time. In the hotel are several rooms on either side of a hall. The prisoner came to the hotel alone about 1 A. M. of the same night. He went with a candle to Room No. 33, across the hall from Room 31. About 5 A. M. the prisoner was seen to leave the hotel. About 10 A. M. the body of the murdered woman was found on the bed in Room 31. The lower part of the abdomen was slashed open, and several inches of the lower part of the ileum were cut out completely and left in or near the body. Other parts of the ileum were cut open, and one ovary was pulled out. The stomach and large intestine were not injured. An ordinary case-knife, broken and sharpened to a point and stained with blood, was found near the body. The bed-ticking under the body was soaked with blood. Three or four spots of blood were found in the hall between Room 31 and Room 33. A spot of blood as large as a dollar was found on the bed, and a spot of about the same

[1] New York Medical Journal, July 11.

size on a wooden chair in Room 33. Bloody finger-marks were found by the side of the door of Room 33 and on the wall near the door.

The murdered woman had said to a female acquaintance on the afternoon of April 23d that she had eaten nothing for several days. On that afternoon she took a glass of beer and a cheese sandwich and some corned beef, raw cabbage, and pickle from a "free lunch" counter. The prisoner had been in the habit of going to the hotel with women, and had frequently left his room, tried the doors of other rooms, and sometimes had gone into other rooms and remained awhile. The deputy coroner, testified that the murdered woman had died of strangulation. The prisoner was arrested the night after the murder. His shirt and both socks were stained with blood. Four days after the arrest matters were taken from beneath the finger-nails of the prisoner, which were unusually long.

The theory of the prosecution was that the prisoner had taken Room 33 for the purpose of entering other rooms during the night and gratifying his passions with women whom he might find alone; that he had entered Room 31 at some time during the night, and had found Carrie Brown after her male companion had left her; that he had taken her by the throat and strangled her, and then mutilated her as described. The theory of the defence was that the blood on the prisoner's shirt was from a woman with whom the prisoner had had connection the night before the murder during her menstrual period.

The verdict of murder in the second degree was reached on circumstantial evidence alone. The evidence which convicted the prisoner was largely that the various specimens presented blood mixed with matters which must have come from the small intestine, and which, by no reasonable theory, could be on the prisoner's clothing and person unless they came from the body of the murdered woman. Preparations were made from several stains in many of which, for instance, matters under prisoner's nails, front flap and right sleeve of shirt, wood from door, socks of prisoner, knife found in Room 31, bed-ticking and sheet from Room 31, — blood was found with more or less admixture of the following: biliary coloring matter unchanged; fat globules and crystals; tyrosine; cholesterin; triple phosphates; columnar epithelium; eggs of round worms; starch granules; partially digested muscular tissue, with a few fibres perfect, and partially digested vegetable matters; molecular detritus.

A record of the autopsy, showed that a portion of the lower part of the ileum had been cut out, the large intestine being uninjured. The case actually turned upon the distinction between the contents of the ileum and the fæces, for it was the general opinion, at least of those connected with the prosecution, that this was the fatal point against the prisoner, as fæces, especially in persons of filthy habits, might have been derived from sources other than those alleged. The opinion of the author, that the matters were from the small intestine, was based mainly on the presence of tyrosine and bilirubin. Relying upon the presence of these two substances taken in connection with the fact that the small intestine was cut and the large intestine was uninjured, and that there was no part injured that could have furnished tyrosine, the conclusion was reached that the matters mixed with the blood, in the specimens which he examined, were practically identical and that they came from the ileum.

THERAPEUTIC NOTES.

VOMITING AFTER CHLOROFORM. Lenevitch[1] emphatically draws attention to a method for arresting obstinate vomiting which so frequently occurs after chloroform anæsthesia, especially in cases of abdominal section. The method consists in thoroughly washing out the patient's stomach with a lukewarm 0.5 or 1 per cent. solution of soda.

HÆMORRHOIDS. — Preismann[2] recommends the application of pledgets of cotton soaked in the following:

R	Potassii iodidi	. . . . .	3 ss to 3 i.
	Iodi	. . . . .	gr. iii to gr. xv.
	Glycerin	. . . . .	3 i. M.

LACTIC ACID IN DIARRHŒA. — At a recent meeting of the Société Médicale des Hôpitaux, Professor Hayem communicated a note on the above subject. He prescribes as follows:

R	Lactic acid	. . . . .	10 to 15 gram.
	Syrup of mulberry	. . . . .	200 gram.
	Water	. . . . .	500 gram. M.

Half a glass to be taken at a time between meals.

Professor Hayem would recommend the same recipe as a prophylactic, and as a curative agent in epidemic cholera.[3]

PUERPERAL ECLAMPSIA. — Perron[4] has obtained good results by the subcutaneous injection of ether.

Correspondence.

"MORTON'S AFFECTION OF THE FOOT."

BOSTON, July 18, 1891.

MR. EDITOR: — I was much interested in reading Dr. E. H. Bradford's recent article[1] upon "Morton's Affection of the Foot," as I was myself an acute sufferer from this form of neuralgia for a number of years. I tried various forms and sizes of shoe without relief, until Mr. Hinchey, of 101 Charles Street, finally made me a shoe which I could wear with comfort. Under his skilful workmanship I have never had a recurrence of the pain; and he has also cured several of my patients whom I have sent to him with similar trouble.

Yours sincerely,
G. M. GARLAND, M.D.

[1] Journal, July 16th, p. 52.

[1] Meditzinskoïe Obozrenïe, No. 1, 1891.
[2] Fortsch. der Krank. July.
[3] Merck's Bulletin, March.
[4] Schweiz. ärtz. Corr. Bl. No. 10, 1891.

METEOROLOGICAL RECORD,

For the week ending July 11, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 5	29.80	68	75	61	60	65	63	S.W.	W.	11	8	C.	C.	.09
M.. 6	29.83	66	72	59	60	55	58	W.	W.	20	9	O.	C.	
T.. 7	29.81	66	74	58	61	92	76	W.	E.	10	12	O.	R.	.15
W. 8	29.83	65	71	60	82	64	73	W.	S.W.	12	9	O.	O.	.52
T.. 9	30.03	63	67	59	78	74	76	N.E.	N.E.	11	4	O.	O.	†
F ..10	30.25	67	77	57	54	48	51	N.W.	S.	7	10	C.	C.	
S. .11	30.27	71	80	62	53	53	53	W.	S.	3	14	C.	F.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 11, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Scarlet fever.	Diphtheria and croup.
New York	1,515,301	957	581	39.31	9.25	29.43	3.12	3.43
Chicago	1,099,850	—	—	—	—	—	—	—
Philadelphia	1,046,964	448	237	30.80	9.90	25.30	.66	1.98
Brooklyn	806,343	572	381	36.75	7.17	30.97	7.00	2.97
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	180	66	11.55	16.50	9.90	.55	—
Baltimore	434,439	284	166	42.35	7.35	39.90	—	1.05
Cincinnati	296,908	148	80	35.51	12.73	29.84	.67	4.02
Cleveland	262,000	—	—	—	—	—	—	—
Pittsburg	240,000	—	—	—	—	—	—	—
Milwaukee	240,000	59	34	20.28	11.83	11.83	—	6.76
Washington	230,392	122	69	36.08	7.38	28.70	—	3.28
Nashville	76,168	45	19	37.74	4.44	33.33	—	—
Charleston	65,165	40	28	50.00	5.00	40.00	—	—
Portland	36,425	10	2	10.00	10.00	—	—	—
Worcester	84,655	21	8	9.52	—	9.52	—	—
Lowell	77,696	52	29	50.00	9.60	46.04	1.92	—
Fall River	74,398	61	50	49.20	8.20	44.28	—	—
Cambridge	70,028	35	23	45.76	8.58	40.04	—	—
Lynn	55,727	11	7	27.27	9.09	—	—	9.09
Lawrence	44,654	23	10	—	—	—	—	—
Springfield	44,179	14	8	57.12	14.28	50.00	—	—
New Bedford	40,733	9	6	36.36	—	27.27	—	—
Salem	30,801	5	3	20.00	—	20.00	—	—
Chelsea	27,909	9	4	22.22	22.22	11.11	—	—
Haverhill	27,412	11	4	27.27	18.18	18.18	—	9.09
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	6	1	—	—	—	—	—
Gloucester	24,651	3	0	—	—	—	—	—
Newton	24,379	10	3	—	10.00	—	—	—
Malden	23,031	3	0	—	33.33	—	—	—
Fitchburg	22,037	5	2	40.00	20.00	40.00	—	—
Waltham	18,707	5	0	20.00	—	—	—	20.00
Pittsfield	17,281	3	1	33.33	33.33	—	—	—
Quincy	16,723	1	1	—	—	—	—	—
Newburyport	13,947	2	1	50.00	—	50.00	—	—
Medford	11,079	1	1	—	—	—	—	—
Clinton	10,424	—	—	—	—	—	—	—
Hyde Park	10,193	2	0	—	—	—	—	—
Peabody	10,158	0	0	—	—	—	—	—

Deaths reported 3,157: under five years of age 1,825; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,119, consumption 297, acute lung diseases 181, diarrhœal diseases 911, diphtheria and croup 80, scarlet fever 39, typhoid fever 27, measles 25, cerebro-spinal meningitis 13, whooping-cough 11, malarial fever 8, erysipelas 5.

From typhoid fever Philadelphia 11, New York 4, Baltimore, Cincinnati, Nashville and Charleston 2 each, Brooklyn, Boston, Washington and Springfield 1 each. From measles New York 13, Brooklyn 5, Fall River 3, Washington, Portland, Lowell and Pittsfield 1 each. From cerebro-spinal meningitis New York 5, Brooklyn 3, Lynn 2, Boston, Washington and Chelsea 1 each. From whooping-cough New York 3, Brooklyn and Washington 2 each, Philadelphia, Baltimore, Milwaukee, Charleston and Cambridge 1 each. From malarial fever New York 5, Baltimore, Charleston and New Bedford 1 each. From erysipelas New York 2, Philadelphia, Brooklyn and Cambridge 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending July 4th, the death-rate was 17.7. Deaths reported 3,197: acute diseases of the respiratory organs (London) 237, whooping-cough 97, diarrhœa 75, measles 67, scarlet fever 27, fever 23, diphtheria 20.

The death-rates ranged from 13.1 in Birkenhead to 24.6 in Wolverhampton, Birmingham 17.3, Bradford 16.1, Hull 17.1, Leeds 17.7, Leicester 15.7, Liverpool 20.2, London 16.8, Manchester 23.1, Newcastle-on-Tyne 17.8, Nottingham 13.2, Sheffield 17.5, Sunderland 20.3.

In Edinburgh 20.5, Glasgow 19.8, Dublin 21.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 11, 1891, TO JULY 17, 1891.

Assistant Surgeon PAUL R. BROWN, U. S. Army, leave of absence extended one month.

Assistant Surgeon W. B. BANISTER, U. S. Army, granted leave of absence for fourteen days.

Assistant Surgeon JOHN J. COCHRAN, U. S. Army, leave of absence, on surgeon's certificate of disability, extended three months.

Surgeon BERNARD J. D. IRWIN, U. S. Army, relieved from duty at St. Louis, Mo., and ordered to Chicago, Ill., for duty as medical director, Department of the Missouri.

Major ELY MCCLELLAN, surgeon, heretofore assigned to duty in the Division of the Missouri, will report to the commanding general, Department of the Missouri, for assignment to duty as attending surgeon, Headquarters Department of the Missouri, and examiner of recruits at Chicago, Ill.

Colonel CHARLES PAGE, surgeon, heretofore assigned to duty in the Division of the Atlantic, will report to the commanding general, Department of the East, for assignment to duty as medical director, and Lieutenant-Colonel CHARLES T. ALEXANDER, surgeon, will report for assignment to duty as attending surgeon, New York City, N. Y.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 18, 1891.

L. W. ATLEE, passed assistant surgeon, ordered to the "Independence."

JAMES SHIRLEY HOPE, appointed an assistant surgeon in the Navy from July 10, 1891.

WM. MARTIN, surgeon, detached from duty at the marine rendezvous, San Francisco, Cal., and from special duty in that city, and granted leave until September 15th, and then to be placed on waiting orders.

M. H. CRAWFORD, passed assistant surgeon, detached from the "Independence," and ordered to duty at the marine rendezvous, San Francisco, Cal., and to special duty at that city.

APPOINTMENT.

Dr. J. P. Crozer Griffith, Professor of Clinical Medicine in the Philadelphia Polyclinic, has also been elected Clinical Professor of the Diseases of Children in the University of Pennsylvania.

DEATHS.

WILLIAM H. TAYLOR, M.D., M.M.S.S., of New Bedford, died, July 20th. Dr. Taylor graduated from the University of the City of New York in 1876. He was Medical Examiner, a Member of the Massachusetts and the New York Medico-Legal Societies, and Surgeon to St. Joseph's Hospital.

J. F. GROENEVELT, M.D., Assistant Surgeon of the Marine-Hospital Service, died of yellow fever, June 29th, while on duty at the Gulf Quarantine Station.

J. L. VANDERVOORT, M.D., for more than fifty years Librarian of the New York Hospital Medical Library, died, July 20th, aged eighty-two.

F. H. POTTER, M.D., of Buffalo, N. Y., Clinical Professor of Laryngology at the University of Buffalo, died, July 16th, aged thirty-one.

T. NAYLOR BRADFIELD, M.D., of Newark, N. J., died, June 28th, aged forty-nine.

SAMUEL SANDS, M.D., of Darien, Conn., died, July 14th, aged seventy-four.

DAVID MATTHEWS, M.D., died in New York, July 9th, aged sixty.

BOOKS AND PAMPHLETS RECEIVED.

Hysteria. By A. F. A. King, M.D. New York: William Wood & Co. 1891.

Bloodless Amputation at the Hip. By Emory Lanphear, M.A., M.D., Kansas City. Reprint. 1891.

Practical Intestinal Surgery. By Fred. B. Robinson, B.S., M.D. Vol. I. Detroit: George S. Davis. 1891.

Vacation Time, with Hints on Summer Living. By H. S. Drayton, M.D. New York: Fowler & Wells Co. 1891.

Bibliographie der Klinischen Helminthologie. Heft I. Echinococcus cysticus bes. von 1877–1890. Von Dr. J. Ch. Huber. München: J. F. Lehmann. 1891.

Contributions to the Pathology of Infantile Cerebral Palsies. By B. Sachs, M.D., Professor of Mental and Nervous Diseases in the New York Polyclinic. Reprint. 1891.

Atlas of Clinical Medicine. By Byron Bramwell, M.D., F.R.C.P., Edin., etc. Volume I, Part I. Edinburgh: Printed by T. & A. Constable, at the University Press. 1891.

Diseases of the Mid-Brain Region, with Special Reference to Ophthalmoplegia, and a Note on Post-Hemiplegic Ataxia. By B. Sachs, M.D., Professor of Mental and Nervous Diseases in the New York Polyclinic. Reprint. 1891.

Lecture.

NEURASTHENIA AND ITS MENTAL SYMPTOMS.[1]

THE SHATTUCK LECTURE FOR 1891.

BY EDWARD COWLES, M.D., SOMERVILLE.

(Continued from No. 4, page 76.)

Classification: — In its acquired form, in a previously healthy organism, it is a primary or a secondary neurosis, — primary when it is due to the immediate effects of nervous over-strain, or to a primary and toxic disorder of nutritional processes, — and secondary, when consequent upon other diseases having a general pathological diathesis with its peculiar exhausting and toxic influences. There is an acute stage, in which the double elements of causation are always present: exhaustion with inanition, and toxicity. It is important to remember that the acute stage may continue for years with a series of exacerbations, under recurrences of the dual causes, and the tendency of nature to effect recovery, which may be finally established. In the chronic stage there has supervened the "molecular or chemical variation" manifested as "an exhausted or changed nutritional power" in nerve-cells, — a condition which may sometimes represent a partial recovery. There may be, in this stage, good blood, good muscles, a well-working mechanism, fairly good health, and physical comfort within lessened limits of nervous strength. The word chronic implies more than duration, — the transition is complete to the stage of permanent change, and the "constitutional predisposition" is fully acquired and established. It is this predisposition transmitted, which constitutes hereditary neurasthenia. In this condition all the forms may occur in all degrees of severity, and may be ameliorated by prophylaxis; it may even exist so quiescent and concealed that it appears to have acute and active manifestations followed by recovery.

Autogenous Toxic Substances. — In support of these conclusions, there would seem to be no unreasonable stretch of inference in such an analysis of the well-known facts of the autogenous production of toxic substances, and of their action in the causation of neurasthenia. Moreover, these facts, and much past conjecture, are now being reduced to scientific order by the discoveries that have established the principle of autogenous disease. It is shown that as the poisons of infectious disease are the chemical products of the action of bacteria upon organic matter, so there are like poisonous substances that regularly result from the chemical changes in non-infectious tissue-metabolism within the body. Just as ptomaines are noxious to the micro-organisms producing them, so are the normal cells injured when the products of their own activity accumulate about them. The discovery, in some of these animal alkaloids (ptomaines and leucomaines), of the chemical poisons that have long been sought, is of special interest in the study of neurasthenia. Some of the substances, not alkaloids, formed in the alimentary canal in the processes of digestion, are powerful poisons; the albumoses and peptones normally produced in the breaking up of the proteids in the food. As Vaughan [28] states it, in discussing the chemical factors in the causation of disease, "it matters not whether the proteid molecule be broken up by organized ferments (bacteria), or by the unorganized ferments of the digestive juices — by the cells of the liver, or by those still unknown agencies which induce metabolic changes in all the tissues; in all cases poisons may be formed. These poisons will differ in quality and quantity according to the force which acts." A number of observers have shown that the peptones may have an intensely toxic action, should they reach the general circulation unchanged.

Hare [29] explains the symptoms of biliousness as not depending upon the changes in the bile, but upon failure of proper digestion in the stomach and intestine, coupled with the development of irritative decomposition-products including a large number of poisonous alkaloids. Normally these do not form in the presence of the antiseptic bile which counteracts the action of the bacteria introduced with the food and is always to be found in the intestinal canal. The disorder of the hepatic function of destroying all poisons of an organic character permits the entrance into the general circulation of these substances, some of which act as do curare, digitalis, atropine, muscarine and picrotoxine; and the number of these compounds is indefinite. He suggests that when symptoms of such poisoning appear, relief may be afforded by the known antidotes for those drugs.

Brunton [30] describes some symptoms of dyspepsia, generally occurring about two hours after meals, as resembling curare-poisoning of the peripheral ends of the motor nerves. These are "muscular relaxation," "a curious weight in the legs and arms" which "feel heavy like lumps of lead." He says that the "melancholy and depression of spirits," associated with disorder of the liver, depend upon noxious substances passing into the general circulation because the liver fails to arrest them. He notes the "hypochondriasis and depression of spirits" associated with oxaluria, when "the patients complain of incapability of exerting themselves, the slightest exertion bringing on fatigue." Severer cases in the asylums have been described as the insanity of oxaluria. But Brunton says these symptoms may occur without oxularia, and he conjectures the presence of some poison in the blood.

Halliburton [31] describes choline and neurine as ptomaines which may also be formed during life as leucomaines in the metabolic processes. Choline is of great importance as a type of these alkaloids, and neurine is closely related to it. Both act like curare on the end-plates. Muscarine, the alkaloid from poisonous mushrooms, is of the same class, and can be obtained also from choline by oxidation; it acts directly upon the muscular tissue itself. All these are powerful poisons, and are antagonistic to atropine in their special action on the heart and glandular system. Choline was first obtained by Strecker from bile, but choline and neurine are among the chief products of decomposition of lecithin. This important constituent of nervous tissue is found also in muscle, blood, and wherever cellular elements exist in the body; it is also in eggs, milk, cheese and other forms of food.

In the changes of nitrogenous metabolism from nervous and muscular tissue through the complex series of transition-products to the end-products discharged

[1] Delivered before the Massachusetts Medical Society, June 9, 1891.
[28] Jour. Am. Med. Assoc., May 16, 1891, p. 16.
[29] Practical Therapeutics, 1890, p. 357.
[30] Disorders of Digestion, 1886, pp. 42, 47.
[31] Chemical Physiol. and Pathol., 1891, pp. 178, 530.

as urea, uric acid, etc., these are notably augmented after excessive muscular work. There are a number of the intermediate substances which are credited with possessing an intensely poisonous action; this includes the familiar phenomena of the still undetermined uræmic poisoning. According to Gautier,[32] in the cycle of changes in the normal tissues of the body, there is constantly going on the formation of leucomaines and their subsequent destruction by oxidation before they have accumulated in sufficient quantity to produce poisonous effects. Hydrocyanic acid plays a very important part in the molecular structure of these bases. One of them, for example, xantho-creatine, studied by Gautier, is poisonous, producing in animals, depression, somnolence, and extreme fatigue; and it appears in physiologically active muscles along with creatinine. Monari has found this base in the aqueous extract of the muscles of an exhausted dog, and also in the urine of soldiers tired by several hours' walk.

The formation and excess of uric acid in the body, and its elimination, have been among the most thoroughly studied of all the toxic conditions. Whether it is due to an excessive formation in the liver, a defective excretion by the kidneys, or to some abnormal state of the nervous system, the many observers agree to its production of the marked symptoms noted by Murchison, among which are lassitude, headache, vertigo, insomnia, depression of spirits, irritability of temper, etc. Garrod ascribes its retention to failure of excretion; and Haig[33] has shown that, being formed by normal processes, its storage in the body, or excretion, are greatly influenced by the comparative alkalinity of the blood, which may be made to vary at will, within considerable limits, by the kind of food, the process of digestion, and the use of drugs. Thus the ingestion of acids, etc., reducing the alkalinity of the blood, and therefore its solvent power, causes the accumulation of uric acid in the tissues. The blood being freed of uric acid, there is diminished arterial tension, better cerebral nutrition, and sometimes a temporary sense of well-being and exaltation. This condition of the circulation is opposed to the elimination of uric acid, and favors storage and retention in the tissues, tending to later trouble. But in such cases, when from any cause there is increased alkalinity of the blood, the uric acid is more soluble, and its presence in the circulation produces the mental symptoms described.[34] Macfarlane[35] believes that the lessened alkalinity of the blood is the important cause of the disorders of sleep in the gouty, as being dependent primarily upon mal-nutrition of the cerebral cells, which renders them irritable and responsive to faint impressions. Cells imperfectly deprived of their detritus do not appear to take up oxygen readily, and consequently they cannot be adequately nourished; they eventually assume a state allied to that met with in neurasthenia.

According to Haig, uric acid in the blood contracts the arterioles and capillaries all over the body, producing coldness of the surface and extremities, and the headache of migraine as a local, vascular effect of uric acid. With lesser effects there are mental depression, dulness, and inability for mental effort. Van Jaksch,[36] using the term uric-acidæmia, has recently found that uric acid accumulates in the blood not only in gout but in anæmic conditions, and considers that the cause of its appearance is defective oxidation. Many observers have attributed gout to the nervous system. Sir James Paget has pointed out that gout mainly affects the sensory parts of the nervous system. These studies show, in respect to this one toxic influence, that its presence in the body, in other conditions as well as the gouty, bears an important relation to the disorders of the nervous circulatory and nutritional processes,—and to that striking symptom of a sub-normal surface temperature which is persistent in some forms of neurasthenia; it also produces characteristic mental symptoms and disturbance of the sensory functions.[37]

The way in which repeated muscular contraction causes what is known as fatigue, is however very uncertain. In regard to the effect of the accumulation of products of combustion, the increased acidity of fatigued muscles has been noted by numerous observers since Ranke[38] pointed out the depressing effect on muscular irritability produced by all acids,—the carbonic and lactic among others, the muscle being alkaline in a state of rest. This excess of acid manifests itself subjectively by the sensation of fatigue, followed by sleep. The revival of exhausted muscles, upon renewal of the blood stream, is due probably both to the removal of the acids and other products of contraction, and to the fresh supply of oxygen,—the chief end-products of carbon and hydrogen metabolism being eliminated by several channels, expired air, sweat and urine. Mosso[39] considers that the poison which causes the symptoms of exhaustion is probably not carbonic acid, but a substance produced in small quantities of an alkaloid nature.

In regard to the results of exercise of nerve tissue it is believed by some that fresh brain, cord, or nerve, has normally an alkaline reaction. All observers, however, agree on the most important fact, that acidity, whether present initially or not, increases on activity, and on death, and is probably due to lactic acid. This inevitably suggests a comparison between nerve and the closely related tissue, muscle. The only known chemical changes during activity of nerve tissue is the increase of acidity; the only known physical change is an electrical one, other than those shown by the demonstrations of Hodge. Some light may come, from such studies, upon the darkness of our knowledge with regard to the essential molecular changes that attend nervous activity. In the chemical reactions the great importance of a healthy blood-supply is noteworthy here; the deprivation of the oxygen it affords means an abolition of all the higher cerebral functions, such as consciousness and volition.[40]

There can be little doubt that certain febrile conditions are autogenous; they may be due to excessive formation of poisons in the body, or an accumulation of these through deficient elimination. Bouchard has shown that the urine excreted during the hours of activity is much more toxic than that excreted during the hours of rest. Both physical and mental labor are accompanied by the formation of the poisonous substances which will accumulate if the hours of labor are

[32] Vaughan and Novy: Ptomaines and Leucomaines, 1888, p. 269.
[33] Uric Acid in Diseases of the Nervous System, Brain, 1891, p. 63.
[34] Ibid. "Mental Depression and the Excretion of Uric Acid." Practitioner, November, 1888.
[35] Insomnia, 1890, pp. 234-236.
[36] See Halliburton, op. cit., p. 733-734; and Haig, loc. cit.
[37] See a review of the subject of auto-intoxication, in an editorial article on "Fatigue as a Cause of Disease." Bost. Med. and Surg. Journal, June 28, 1888.
[38] See Halliburton, op. cit., p. 433.
[39] Report of Internat. Med. Congress, Berlin, 1890.
[40] Halliburton, op. cit., pp. 515, 516.

prolonged and those of rest shortened.[41] As a result of deficient elimination, "fatigue fever" is not uncommon in its milder forms, with its symptoms of impaired appetite, mental and physical "irritability," restlessness, insomnia or fitful and unrefreshing sleep, and an excited brain that will not rest. In a severer degree this self-produced condition is the "fever of exhaustion"; and this leads up to the deadly typhus, which is the highest expression of the poisoning of the organism by itself or by contact with others under like conditions.[42]

The general truth of this matter is well summed up by Aitken[43] when he says that "the healthy living organism may become poisoned (gradually and more or less slowly) by the accumulation within itself of deleterious substances normally elaborated. Hence the slow and insidious onset of much ill-health; and from which recovery is correspondingly slow." The few examples cited serve to show the nature of the evidence, and that we have constantly to deal with definite toxic influences in the processes of nutrition and the discharge of energy in the organic mechanism. It is true that we have as yet little precise knowledge of these toxic substances, and of their effects upon the nervous system. Many of those obtained are probably formed by the action of the reagents used in the analysis, when their existence in a free state, in healthy tissue, is very doubtful. But though the science is yet in its infancy we know enough to recognize the immense clinical importance of studying the chemical elements whose positive influence in the production of nervous symptoms must now stand as an unquestioned fact. It must be remembered also that we are still compelled to study functional "activities," and disordered conditions of which we can find no trace in the organism.

The study of the general organic mechanism, so far, shows that it may be conceived as made up of many minor mechanisms which may be studied as represented by their activities. Some general truths have been reached in regard to all of them as to their structure, their co-ordinations, and the results of their functional exercise. These conclusions are in support of my first proposition, to the effect that, when the mechanism is put into use, physiological activity and toxicity always occur together, and that the condition thus jointly produced has its first expression in normal fatigue. Moreover it appears that in pathological fatigue or nervous exhaustion, which constitutes neurasthenia, there results from excessive use and inanition a condition of "excessive irritability and weakness" of the nervous system. There is also, in acute neurasthenia, always an increased toxicity, by its accumulation in fatigued areas, and often by general fatigue and auto-intoxication through disordered nutritional processes.

(2) *Mental Elements in Normal and Pathological Fatigue.* — It is next in order to make a practical application of general truths more precisely to the nervous and mental mechanisms, and their special disorders in neurasthenia. This leads to my second proposition, that to properly study our problem we must take into account the nature and manner of production of the mental symptoms common to nervous exhaustion and insanity. This brings out the main purpose of this study of the relations between mind and body:— to show how it is that the mental symptoms furnish a ready index of the fatigue and auto-intoxication of nerve and muscle tissues, as a guide for diagnosis, prophylaxis, and treatment; and also to show how the general symptoms of nervous exhaustion can be better understood by a proper interpretation of the mental symptoms. The acute, acquired form of neurasthenia will therefore be first considered with reference to the mental symptoms, to show what they are, and how they are produced.

All observers agree that the symptoms of neurasthenia are largely subjective. There are objective signs, but the physician mainly depends upon the patient himself to tell how he feels. Every physician also learns to qualify such statements according to his estimate of the individual and his mental state, under the bias of the characteristic "hopelessness" and "worry," or even of the less intense "depression of feeling." These symptoms pertain to the state of the feelings, and constitute the emotional tone, in its intimate dependence upon bodily states which afford a general sense of comfort or discomfort,— of well-being or ill-being, more or less persistent. This is quite independent of the intellect, and the passing feelings which are normally attendant upon pleasing or painful ideas. These disorders of the feelings and the emotional state constitute one distinct group of mental symptoms.

All the writers on this subject have also given prominence to the striking clinical manifestations of "inability to concentrate the mind,"— the weakening of the power of attention. Here is another important group of symptoms that represent disorders of the intellectual activities and the voluntary power. The most prominent of these, as a sensitive index of nervous fatigue and exhaustion, is the attention.

The Primary Data of Mental Activity,— two groups. — All these mental activities have to deal with sensations as furnishing the primary data of their operations. There are two groups also of these sensations: — the first are the general organic sensations, not intense enough ordinarily to pass over the threshold of consciousness, but they constitute the vast subconscious inflow of minor sensations through all the sensory channels that lead to the sensorium from every tissue and organ, and from every peripheral mechanism, nervous or muscular, in the body; the second are those we are conscious of as presented through the special senses and that stand in the mind as perceptions, ideas and memories;— these are the data of consciousness. The great complexity of this matter can be made intelligible by taking a little time and patience to grasp some general principles, and to reduce the complex elements to an orderly arrangement in our conception of the mental mechanism.

(1) *Organic Sensations and the Emotional Tone.* — The organic sensations in the subconscious mechanism, demand first consideration as best revealing something of the mystery in the relations between mind and body, and the genesis of the mental symptoms in neurasthenia. These sensations, proceeding from all the states of the body, are in some degree and form represented in the sensorium. They constitute the sense of body, — the sense of personality.[44] The line cannot be strictly drawn between the conscious and the subconscious activities, as to these organic sensations. Many of the sensations received through the special

[41] See Vaughn and Novy, op. cit., p. 293.
[42] See Aitken: The Animal Alkaloids, 2d Ed. 1889, p. 28.
[43] The Animal Alkaloids, 2d Ed., p. 20.
[44] Ribot: The Diseases of Personality, trans. Chicago, 1891.

senses and giving knowledge of the outer world, enter a passive consciousness, as the ticking of a clock that is not consciously perceived unless it stops, or attention is turned to it. There are still weaker sensations, coming through the special senses, of which we are not conscious. In like manner, but in reverse order, the great mass of the organic sensations are normally unperceived, but some of them may be intensified enough, as by some disorder, to enter the field of consciousness. Those arising from the trophic, and minor inhibitory mechanisms, are among the most subtle and unfelt, as are those from vaso-motor changes in the general and local circulation which are most important in their influence upon mental states. But even among these, the inner tingling sensations, followed by general chilliness and external pallor upon a sudden idea of great danger, are probably due to the swift vaso-motor constriction. There are also the normally unperceived, though incessantly repeated sensations, which provoke and accompany the respiratory movements. They may arise also from the state of the muscles after exercise, even when inactive, giving the feeling of fatigue and exhaustion; or in an opposite condition may afford a general sense of vigor. The muscular sense is a stronger representation of the organic sensations that are sometimes classed with the special senses. Hunger and thirst are not localized sensations, but result from a discomfort of the whole organism, being connected with the state of nutrition.[45]

Sense of Well-being. — These normally latent or obscure sensations, low in intensity but great in volume, are persistently flowing inward beneath the fewer but relatively intense and transient sensations from the special senses. In the healthy organism, refreshed and vigorous, there is an equilibrium of physical sensations, or a multitude of agreeable feelings attendant upon the exercise of normal power. This physical state produces a mental sense of well-being; the persistence of this will give its special character to the physical and mental habitude, or the personality of the individual.

(To be continued.)

[45] Bain: "The Senses and the Intellect," 3d Ed., 1888, Part II.

Original Articles.

COMPRESSION IN THE TREATMENT OF ANEURISM, WITH THE DESCRIPTION OF A NEW APPLIANCE.[1]

BY H. H. A. BEACH, M.D.,
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IN asking for the attention of the Society upon a subject that has already received the widest discussion from some of the ablest writers in the profession, I will not repeat the arguments for and against the treatment by compression as opposed to ligation, believing that you are already familiar with them. It may be conceded, however, that in view of the greater chances of a rapid union of wounds without suppuration, through the employment of rigid antiseptic precautions, the mortality from the operation alone, on arterial trunks, has been much reduced in the past thirty years, and cannot be fairly compared with the statistics of compression for the same period. A comparison of the statistics of amputation and ligature of principal arteries compiled twenty-five years ago (see those of Mr. Bryant and Dr. Norris respectively) shows almost as great a mortality from ligature of the femoral artery as from amputation of the thigh. The mortality of the Hunterian operation to the year 1870 was 18.7 per cent. After that it was reduced to 15.6 per cent., and from 1875 to 1879 it declined to 8.57 per cent.[2] In six London hospitals it reached 23.08 per cent.

On the other hand, the Hunterian operation involves the most serious risk to life and limb through a factor which is independent of an aseptic wound, and that is gangrene. Of 53 fatal cases of ligature of the femoral artery for other reasons, reported by Norris, 23 died of that disease. In striking contrast to the foregoing clause is the following extract, from the report by Mr. Hutchinson, in the London *Medical Times*, 1856:[3]

In 46 cases of popliteal aneurism treated by pressure, 24 were cured. Of the remaining 22, in whom the artery was tied, two only died of gangrene, while of ten other cases where the vessel was tied, without preliminary compression, three died of gangrene.

If important changes in methods of compression have developed from year to year, it is clear that they have not kept pace with the advantages gained through an aseptic wound treatment when employed in the ligature of arteries. Of 148 cases of popliteal aneurism collected by Barwell,[4] where various forms of compression had been employed, 80 of them were failures. Of 47 cases treated by the Esmarch bandage, 20 were unsuccessful, and required other treatment. Another group of 90 patients, also collected by the same writer, gave 34 failures; and of 91 cases treated by the flexion method, 49 were unsuccessful. Of 22 cases, including various methods of treatment at the Massachusetts General Hospital, between the years of 1821 and 1864, the percentage of cures was 54.44. They included six cases treated by primary ligature of the femoral artery, three by compression, one by compression and secondary ligature of the femoral artery, and in two instances the sac was incised and both ends of the artery tied. Two patients left the hospital relieved by compression and secondary ligature of the femoral, and two others that had been treated by compression alone. Of the six deaths, two resulted from ligature of the femoral, one from incision into the sac and with both ends of the artery tied, one from compression, one from compression and kneading of the sac, and another from compression and secondary ligature of the femoral artery.

The large number of failures in the treatment of popliteal aneurism by compression, as compared with ligature of the femoral artery, excluding the advantages of the antiseptic method, point to some radical defect in the application of compression. Upon examination of the records of various methods, that of Mr. Todd, of Dublin, as published by Holmes, attracts immediate attention, for it includes a principle that I believe is fundamental in the successful treatment of aneurism, whether applied accidentally or with intention. To lessen the risk of gangrene, Mr. Todd recommended a preliminary pressure on the femoral artery

[1] Read before the Boston Society for Medical Improvement, April 13, 1891.

[2] International Encyclopædia, p. 466.
[3] Holmes's Surgery, p. 489.
[4] International Encyclopædia.

so as to cause a dilatation of its collateral branches. This practice was followed out for some time, and then became merged in the general one of continuous compression without ligation of the artery, in which the Irish surgeons were particularly successful, Mr. Holmes quoting a series of 25 cases with but one failure.

There can be no question that the cure of a popliteal aneurism, either by ligature or compression with preservation of the leg, includes the development of an adequate collateral circulation, and that the development of such a circulation depends upon the number of anastomosing branches (which are known to vary), the degree of constriction to which the limb may be subjected, the quality of the blood and the skill with which compression is applied to the main arterial trunk, and last, but not least, the soundness of the arterial system and the propelling power of the heart. The first and last two factors cannot be definitely estimated before subjecting the patient to the test which a complete blocking of the artery furnishes. Assuming that to be done with a ligature (unless applied provisionally), a certain number of chances against recovery must be taken with no possibility of changing the course of treatment. Should gangrene follow the application of the ligature, our only recourse is amputation, and even that provision may be denied the surgeon.

With an efficient apparatus for compression, the flow of blood may be regulated by the necessities of the limb, as shown by temperature and color. One can hardly appreciate the tremendous tension to which vessels no larger than the capillaries are subjected in the establishment of a collateral circulation, without the careful dissection of parts so involved. It is easy to understand why ulceration of the main trunk may occur at the point of ligation from such pressure, and so end the patient by hæmorrhage before a cure of the aneurism has been effected. My attention has been directed to this subject through various experiences in the treatment of aneurisms, but more particularly in the year 1875, when, through the kindness of Dr. Buckminster Brown, I had the opportunity of making the post-mortem examination of a patient of his, who had died six years after the cure of a femoral aneurism by direct compression.[5]

A careful study of this preparation was convincing as to the amount of pain which was likely to follow an interruption of the arterial current through the great distension of the smallest vessels that could ramify between the nerve fibrils and in the sheath surrounding the anterior crural and sciatic nerves. Such a distension should cause about the same amount of pain, whether produced by ligature or compressing pad. It is of a different character from that caused by the application to the skin of hard, unyielding pads maintained in position by a mechanism equally rigid and unyielding. That such pressure without anæsthesia should be unbearable, it is not difficult to understand, whether produced by fingers or pads; also, that the only substitute for it is the employment of more time in the process of cure, by a compression that can be borne without anæsthesia, or the production of sloughing skin.

In the construction of apparatus for the treatment of popliteal aneurism, much ingenuity has been shown in the application of pads and weights with and without springs of various kinds, wet sponges, hollow rubber balls, etc., all of which show the desire to accommodate the necessary amount of compression to a preservation of the soft parts. In considering the various appliances for saving pain and sloughing skin in *other* surgical cases, the protection and equable distribution of pressure that can be had through the application of a rubber water-bag occurred to me. Its use was suggested by the relief which I had known to follow such an appliance in the support of the heel, in fractures where the pain was considerable, in the bliss which comes to those afflicted with burns and scalds who must lie upon their ulcerated surfaces, and to the efficiency with which trusses equipped with such pads support a hernial protrusion.[6] The advantages suggested by the new pad were a steady and equable pressure, easily controlled and adapted to the requirements of many cases, comfort to the patient, and security from the production of sloughing. It was a simple matter to test its efficiency by attaching it to the wooden ball of the Massachusetts Hospital tourniquet with which you are all familiar, and to apply it to the first case that should enter for treatment. Fortunately that case was a most unpromising one, and offered the severest test of the capacity of the instrument, as the following extract from the hospital records will show:

The patient, a negro woman of moderate intelligence, thirty-one years of age, entered the hospital with a history of syphilis, having had tertiary symptoms. For eight weeks she had suffered from pain in the popliteal space, for which she used liniments. Her leg had been swelling below the knee for four weeks, and a swelling had been noticed in the popliteal space within that time. She was unable to walk, nor could she extend the leg on account of the pain produced. She also suffered from constant pain which extended from the popliteal space into the foot. The knee was swelled, and a tumor the size of a hen's egg filled the popliteal space, and presented an expansile pulsation, which was transmitted to the muscles on either side of it.

Pressure on the femoral artery at the apex of Scarpa's triangle stopped the pulsation. The leg was raised on pillows, and the foot of the bed elevated for two days, to lessen the œdema of the limb.

Compression was applied to the femoral artery at about the middle of the thigh, with the tourniquet and rubber water-pad covered with silk, as before described. An ice bag was placed over the knee, a fold of linen cloth between the pad and the skin, and the pressure regulated so as to diminish the circulation in the aneurism, but not to stop it entirely.

During the next four days the patient had considerable pain in the knee and foot, controlled by morphine. A marked diminution in the pulsation of the aneurism.

In the next six days the pressure easily arrests the aneurismal pulsation, without pain at the point of pressure. The patient complains of pain in the knee, and describes the return of sensation to the foot where before it had been numb. She is restless at times, and the pain easily controlled by morphine.

On the tenth day from the beginning of pressure the pulsation had ceased to be expansile. A single murmur could be heard over the inner surface of the knee, but none at the middle of the popliteal space.

Two days later the pulsation was very slight; the pressure was removed.

[5] For description of autopsy and specimen see Boston Medical and Surgical Journal, 1875 ("Femoral Aneurism").

[6] As manufactured by Messrs. Leach & Green.

For the following two weeks a very faint pulsation remained in the tumor, which was not in the least expansile. The pain in the knee stopped, and the œdema of the leg and foot nearly disappeared. The leg could be more easily extended.

One month following the removal of the tourniquet a slight fluctuation was detected at the most prominent point of the swelling.

Two days later pulsation reappeared, and pressure was reapplied to the femoral artery.

In two days the pulsation had nearly stopped again. At the point where fluctuation had been detected, the skin became progressively thinner until twenty-five days after, when the staining of the bed-linen with reddened serum suggested the necessity of opening the sac and turning out its contents.

A tourniquet was applied to the artery, the patient removed to the operating theatre, and the aneurism laid open by an incision of four inches. There was no evidence of suppuration, but the cavity of the aneurism, which was of the size of two fists, was filled with a firm and distinctly laminated coagulum, which had apparently by pressure caused an erosion of the aneurismal sac from within. The incision was prolonged to a point above Hunter's canal, and the femoral artery tied with silk at that point. The upper end of the vessel was partly filled with thrombus, the lower end completely plugged, and not requiring a ligature. There was some hæmorrhage, which was checked without difficulty, the cavity carefully cleansed and packed with iodoform gauze. The patient rallied well from ether.

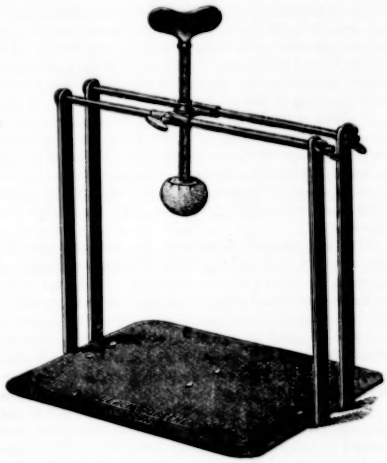
Five days later this dressing was removed, and the wound found closed by first intention, with the exception of the cavity of the aneurism, which gradually filled with granulations and healed, so that she was discharged from the hospital in a few weeks.

During that time she developed a troublesome bedsore over the external malleolus, which was slow in healing, also specific symptoms which yielded to appropriate internal treatment.

I have seen her within a short time, one year following her admission to the hospital, and found her doing all of her house-work, the wound of operation having healed completely, and presenting a flexible cicatrix that permitted flexion of the limb with ease. She had a neglected ulceration on the lower part of the leg, which she did not think worth while to devote much attention to.

To summarize the case is to repeat that a well-regulated compression, applied continuously and at the same point to the skin of a syphilitic subject for twelve days, and for other shorter intervals afterwards, produced little or no pain at the point of pressure, and not the slightest irritability of the skin. That, notwithstanding the success of the compression in forming a firmly laminated clot filling the cavity of the aneurism and developing an efficient collateral circulation, better material was needed than what could be furnished by a patient cachectic from syphilis, to consolidate the large mass of clot and insure its firm and permanent adhesion to an already largely distended aneurismal sac. To have attempted a ligation of the artery or a complete compression of the femoral at the very beginning of treatment, without having first developed a competent collateral circulation, would have, as nearly as I could estimate the chances, sacrificed the leg with gangrene. While the complete success of the compression, without resorting to the method of Antyllus, would have been most gratifying. I am glad to present you with evidence so satisfactory of the value that the new appliance may have in cases uncomplicated with other diseases.

The apparatus, which is manufactured at a moderate price by Messrs. Leach and Green, consists of a steel base measuring eight by nine and a half inches, and uprights on each side measuring nine and a half inches. The latter are continuous beneath the base, and for stability are firmly riveted to it. Each upright supports a steel rod of one-quarter of an inch diameter. Upon the rods slides a light, but firm, carriage, which



can be fixed at any point by a thumb-screw. The carriage is perforated in its centre, and drilled to receive a screw of three-eighths of an inch diameter, carrying four threads to the inch, and measuring seven inches in length. It is fitted at the top with a thumb-piece, and at its bottom with the small rubber water-bag, already described, and measuring an inch and a half in diameter. It is easy to understand that, with the aid of carefully folded sheets and towels, the apparatus can be adjusted to a thigh of any size, and the pressure adapted to the requirements of the case. By unscrewing the nuts at the ends of the rods, the screw and the pad can be quickly removed to permit the adjustment of the thigh with the greatest comfort to the patient. A question might be raised as to the durability of the water-pad. I can only say that, having prescribed them for a number of years in the treatment of hernial tumors, I have never known one to rupture, even after long service.

CHEAP FARES FOR PATIENTS. — By a recent ordinance of the Bavarian Government patients in necessitous circumstances are granted a reduction of railroad fare in going to or from hospitals or other public medical institutions. They are henceforth to be charged at the same rate as the special third-class fares allowed to soldiers.

A CASE OF NEPHRECTOMY FOR INJURY OF THE KIDNEY.[1]

BY HOMER GAGE, M.D, OF WORCESTER,
Surgeon to the Worcester City Hospital and to the Memorial Hospital.

Mr. Benjamin Bell, after a very careful description of injuries to the kidney, their dangers and possible complications, dismisses the question of their surgical treatment with these words: "All that art can with propriety attempt is to prevent the urine from lodging." This was in 1791, and until within a few years art has not attempted to do more. The number of instances in which operative interference has been resorted to for the relief of wounds and injuries of the kidney is still so small as to make each new experience worth recording, and to justify us in considering very briefly when and how such interference may best be employed.

The subject of the following case was a girl twelve years old, who entered my service at the Worcester City Hospital, October 18, 1890. She had always been strong and well, was well nourished, and well developed. It was said that six days before, while stooping over to pick something from the floor, a small pair of shears fell from a height of about seven feet, striking her in the back. They penetrated her clothing and entered the right loin, but, upon raising herself into an erect position, they were dislodged and fell to the floor. Subsequent developments made it altogether probable that they were impelled by a stronger force than that described, but I was never able to obtain any different account of the accident. She was seen soon afterward by Dr. J. H. Kelly of this city, who found a penetrating wound about one inch long, just below the twelfth rib, about an inch and a half to right of the vertebral column. There was no evidence of shock, and but very little external hæmorrhage. After cleansing the wound he closed it with a superficial stitch, and primary union had already taken place at the time of her admission to the hospital. On the evening of the accident the urine became very bloody, with numerous clots, one apparently a perfect cast of the ureter. On the following day the urine was clear again, but on the second day the hæmaturia reappeared, and had continued without intermission up to the time when I saw her.

She was then quite anæmic, had a temperature of 102.6°, pulse of 110—complained of pain in the right lumbar region, radiating downward along the course of the right ureter. This pain was somewhat increased upon pressure, but no fulness or increased resistance was discoverable by palpation. The urine was very bloody, with large clots, some resembling casts of the ureter. Microscopic examination of the sediment revealed, beyond the presence of blood, nothing abnormal. The act of micturition was very much increased in frequency, and associated with very marked tenesmus. Sometimes she could not pass water until a clot had been pulled out of the urethra with forceps, or dislodged by irrigation. During the next week her temperature ranged from 100° to 102.5°, while her pulse maintained its strength at 110. She slept poorly, and had no appetite. The twenty-four-hour amount of urine was approximately sixteen ounces, and contained a great deal of bright red blood. The pain was referred chiefly to the bladder. Up to the 25th of October it had been impossible to note any difference in the loins, but on that morning a semi-fluctuating tumor, the size of a small flattened horse chestnut, could be felt just below and outside the scar of the original wound. The pain in her side was increased, while the urine became perfectly clear. It remained clear for two days, when she had a smart hæmorrhage from the bladder, with coincident disappearance of the tumor in the back. Her pulse had risen to 120, and her temperature ranged from 99° to 102°. Convinced that extravasation into the perinephritic area had already taken place, that the hæmorrhage proceeded from some large branch of the renal artery, and that further delay would only add to the dangers of an operation which must sooner or later become imperative, I decided to operate on the 28th of October, sixteen days after the reception of the injury.

A vertical incision was made on the right side from just below the outer end of the twelfth rib downwards to about three-fourths of an inch above, and just behind the centre of the iliac crest, curving forward from here on the abdomen to a point in the line of the anterior superior spine of the ilium. The quadratus muscle was drawn to one side and the dissection prosecuted through the perinephritic tissue. The latter had become so infiltrated with organized blood-clot that it resembled a cut section of the liver. Retained immediately about the kidney were two or three ounces of dark bloody pus of a decidedly urinous odor. On the posterior surface of the exposed kidney, corresponding in position to the original wound in the skin, was a ragged, incised wound about half an inch long, the edges of which had not united. The ureter was found very much distended, filled with clot, and its walls were so thin that it resembled, and it was at first mistaken for, a large vein. It was cut after being secured by a strong silk ligature. A single silk ligature was then passed around vein and artery together. A transverse incision was made into the kidney to make sure that the vessels had been secured, and it was then removed in two sections, first, the upper one-third, then the lower two-thirds. There was no hæmorrhage — the wound was thoroughly irrigated with bichloride, then with hot water, and a large drainage-tube inserted. It was closed with interrupted silk sutures, and an antiseptic dressing was applied.

At the end of the operation the patient was in a condition of profound shock, with a very rapid fluttering pulse. Upon being placed in bed and surrounded with heaters she rallied quickly, and the pulse became clear and distinct at 164. There was no vomiting, and under the free administration of digitalis and stimulants the pulse had fallen by evening to 140, of good strength. She passed urine involuntarily twice during the night, but slept well; and from that time forward her convalescence was uninterrupted. Her temperature was 102.2° on the night of the operation, and 101.6° on the following night. It never afterward rose above 101°. The amount of urine passed during the first twenty-four hours could not be measured because of the two involuntary discharges, but in the second twenty-four hours it was fourteen ounces, and during the succeeding week it maintained a daily average of fifteen ounces. Two weeks later it had risen to between eighteen and twenty ounces. The stitches were taken out on the fifth day, the tube on the sixth, and on the ninth day she sat up in a wheel-chair. The

[1] Read before the Massachusetts Medical Society, June 10, 1891, and recommended for publication by the Society.

wound was healed except along the track of the drainage-tube, from which there was a slight sero-purulent discharge. At the time of the operation she received a severe burn on the sole of the foot, which kept her from walking for a long time, and was the source of much more pain and discomfort to her than the removal of her kidney. On the 9th of December, less than six weeks after the operation, she left the hospital — both wounds healed.

Since her discharge she has grown taller and stouter, has enjoyed excellent health, and attended school regularly. About four weeks ago the track of the tube reopened and one of the silk ligatures came away; the sinus still discharges a very little occasionally, and I presume the other ligature will follow.

Examination of the kidney after removal showed that the blade of the shears had entered its posterior surface near the junction of the lower and middle thirds, midway between the outer and inner borders. Passing downwards and inwards, it had crossed the pelvis of the kidney, severed a large branch of the renal artery, and emerged through the capsule on the opposite side. The wound showed no attempt at healing. The plugging of the ureter by clots caused the extravasation of blood and urine through the wound into the perinephritic cellular tissue, while the urine passed from the bladder came from the uninjured kidney and was perfectly clear. The discharge of the clot allowed the extravasated blood to drain back into the pelvis, and led to the collapse of the tumor as noted on the day before operation. One of the most striking features of this case was the entire absence of shock following so severe an injury to the kidney. To be sure there was no complicating wound of the peritoneum or of other viscera, and the hæmorrhage took place very slowly; still its absence is noteworthy, and suggests, I think, at least as probable, that a simple incision of the kidney will ordinarily produce no constitutional disturbance if the large vessels are carefully avoided.

Accidental wounds and injuries of the kidney are by no means so dangerous as was formerly supposed. Of the eighty cases of gun-shot wounds recorded in the "Surgical History of the War of the Rebellion," all treated expectantly, one-third recovered, and a large majority of the fifty-four fatal cases were complicated by serious injuries to other viscera. The results of subcutaneous rupture and laceration are even more favorable. In the same history are reported five cases of this nature, with three deaths and two recoveries. To these we may add the 71 cases reported by Maas and the 27 cases of Otis, making a total of 103 cases, with 50 recoveries and 53 deaths. Of the fatal cases, twenty may fairly be attributed to injuries of other organs, leaving the mortality from uncomplicated subcutaneous wounds of the kidney at 33 per cent. Gravitz, from a consideration of 108 cases, including most of those just alluded to, places the mortality in uncomplicated cases at 35 per cent. It follows, therefore, that about two-thirds of the uncomplicated cases recover, under the expectant plan of treatment. Punctured and incised wounds speedily become subcutaneous, as in the case just reported, by the closure of the wound in the skin, and present no additional dangers. The natural tendency to recovery in so large a proportion of cases makes the presumption decidedly in favor of a policy of non-interference. More radical measures are to be undertaken only in the presence of clear and strong indications. It is, of course, difficult to determine when interference is really demanded, and when rest, opiates and cold applications are likely to be sufficient.

A consideration of the fatal cases above mentioned shows that whenever the patient has survived the immediate shock of the accident, death has almost always resulted from hæmorrhage, or from septic infection. If the peritoneum remains intact, the extravasation of blood and urine takes place into the perinephritic and subperitoneal tissues. If the peritoneum is torn, extravasation takes place into the abdominal cavity with, even if the hæmorrhage is inconsiderable, the development of a rapidly fatal septic peritonitis. Of 47 cases in which the cause of death is stated, excluding deaths from primary shock, 23, or 48 per cent., were the result of sepsis, and 15, or 32 per cent., the result of hæmorrhage, that is, 80 per cent. of all cases. Suppression rarely occurs unless both kidneys are injured, or only one exists. Deaths from shock and suppression are unavoidable. Those from hæmorrhage and sepsis are at least, in some measure, controllable. The difficulty is to know when and how.

In general, we may say that surgical interference should be limited to those cases in which one, or both, of these dangers already exists, or may reasonably be expected. Whenever the loss of blood, whether from an external wound, or per urethram, is so great as to threaten the life of the patient, resort must be immediately had to operative interference. A blanched countenance, rapid pulse, and threatened collapse, indicative of internal or concealed hæmorrhage, demand equally prompt action. If the wound is subcutaneous, the only other danger would be from extravasation of urine. If this has taken place into the abdominal cavity, it will be speedily followed by the symptoms of perforative peritonitis — abdominal pain, tenderness, distension with tympanitis, vomiting, and profound prostration. Operation would then always be indicated. If, on the other hand, the peritoneum is not ruptured, and extravasation takes place into the cellular tissue about the kidney, an increasing sense of fulness and tenderness in the lumbar region, with beginning signs of constitutional disturbance, make further delay dangerous and unsurgical. If, instead of being subcutaneous, the wound is of the penetrating sort, we have the same condition of things according as the abdominal cavity is, or is not, opened, and besides the possibility of infective material having been introduced from without. The indications for operative interference just given will still hold good with the following addition. A wound inflicted from the front or side, and injuring the kidney, must in all probability have passed into and through the peritoneal cavity; it ought, therefore, to be thoroughly explored, and the protection of the peritoneal cavity secured. Active interference is also necessary in those cases where urine escapes from a wound inflicted from behind, and not opening the abdominal cavity.

How shall we interfere? There are several methods of procedure: namely, simply a free lumbar incision with drainage, the same incision carried down to, or into, the kidney, with drainage or packing for the relief of hæmorrhage, that is, nephrotomy — dissection in the same region carried still further, and the kidney removed, that is, lumbar nephrectomy — or lastly, laparotomy, exploration of the peritoneal cavity and removal of the kidney through an incision in the mesocolon,

that is, abdominal nephrectomy. As illustrating the results of these methods, allow me to call your attention to the tables derived from Willard's article in the "Transactions of the American Surgical Association," and from Newman's recent work on "Surgical Diseases of the Kidney." There are in all sixteen cases. Of primary operations there are three abdominal nephrectomies, all for gunshot wounds, with one recovery and two deaths; three nephrectomies for knife wounds, all of which recovered, and three for rupture, with two recoveries and one death, — these six through a lumbar incision; two primary nephrotomies, both for rupture, and both successful. There were four secondary lumbar nephrectomies for rupture, with three recoveries and one death, and one similar successful operation for prolapse of the kidney through a lacerated lumbar wound. Of the two deaths from the abdominal operation, one took place on the fifteenth day from gangrene of the intestine, which had been wounded by the bullet, and the other on the fourth day from shock and hæmorrhage, the renal vein and artery having both been severed. The death from primary lumbar nephrectomy was from sepsis, that from the secondary operation was due to shock.

In 1885, Dr. S. W. Gross compiled the statistics from 233 cases of extirpation of the kidney for disease, and found that the mortality by the lumbar incision was about 37 per cent., while that by the abdominal was about 51 per cent. The results obtained from operations for traumatic lesions do not diminish the advantages of the lumbar incision. Except when specially indicated the abdominal should never be the operation of choice. It is to be preferred, I think, whenever the track of the original injury appears to lead through, or into, the peritoneal cavity, and would, therefore, be selected in all cases where the wound was inflicted from the front or side of the body, and whenever there was reason to suspect an extravasation of blood or urine into the peritoneal cavity. Shall the incision be made in the median line or in the linear semilunaris? The kidney must be reached by cutting through the parietal reflexion of the mesocolon, and this lies almost directly under the outer edge of the rectus muscle. Even here the opening in the abdominal wall must be at least four or five inches long — if in the median line it must be much longer, with a consequently increased exposure of the abdominal contents and the additional risk of a more difficult manipulation. Whenever possible the opening in the mesocolon should be closed, and in all cases I would drain from behind. Under all other circumstances in which operative interference is indicated, the kidney is to be reached from the loin. Various incisions have been proposed, and each has its advantage in individual cases. The nature and location of the wound will generally determine the surgeon's choice, as it will the extent of his operation. If there is no escape of urine through the wound, packing with iodoform gauze will control the hæmorrhage, and this, with efficient drainage, will probably be enough. If urine is escaping through the wound, one must decide between primary extirpation and the secondary operation for the relief of the fistula, which will probably result. Other things being equal, secondary extirpation is the more favorable operation. One's judgment as to the ability of the patient to withstand the additional shock of the operation must be weighed against the chances of adhesions being formed, and a more formidable though secondary operation made necessary. If the kidney is prolapsed through the wound, it may, if uninjured, be replaced, and secured by sutures through the capsule as in nephroraphy for movable kidney; if injured, it is better to remove it at once.

PRELIMINARY REPORT ON THE CLINICAL USE OF TUBERCULIN.[1]

BY HAROLD C. ERNST, M.D.,
Instructor in Bacteriology at the Harvard Medical School.

(Continued from No. 4, page 79.)

Case 32. Boston. Admitted December 9, 1890. Service of Dr. A. L. Mason. Born in Ireland, thirty-five years old, single, stone-mason. Family history negative. Former diseases: fever when a child, and pneumonia in April, 1890, and no enlarged glands at that time. Date of commencement of the disease, October, 1890. Appeared as swelling under the jaws, gradually growing; since then increased, no pain. General health poor. Anæmic; well developed; poor strength and nutrition; appetite good; sleep poor; skin normal; cardiac apex under the nipple; circulation negative; temperature 101.6°; pulse 104; respiration 28; slight dyspnœa; alcoholic habit; urine pale, cloudy, 1031, considerable sediment made up of amorphous urates, trace of albumen. Six weeks ago there was pain in the back and calf of the leg, and he had to give up work; lost flesh and strength. One week ago enlarged and sore gums; bad taste in the mouth; the gums bleed at night; teeth feel loose, but seem to be sound. Examination showed many large glands from the size of a pea to a large group, soft and distinct, in both cervical triangles; same over the mastoid and under the jaws, and about the clavicle; thyroid glands normal; fulness under the clavicle; bunch of glands in each axilla; epitrochlear glands were large as a pea; left iliac fossa showed some movable glandular tumors an inch or so in diameter; right iliac fossa showed similar but larger masses; the inguinal glands were enlarged; liver and spleen apparently normal.

December 18th. Says he is feeling better; sits up daily with blankets; has no bleeding to-day from the gums.

December 30, 1890. Percussion and respiration of the chest in front, clear; in the back, slight dulness near the spine in the right lower back, with broncho-vesicular quality to the respiration, and occasional, fine, moist râles; on the left, respiration slightly broncho-vesicular along the region of the spine. Weaker in the last few days.

January 29, 1891. Examination of the lungs by Dr. Stickney. Breathing showed higher pitch over the upper front than below. The right apex shows an approach to tubular breathing. Expiration slightly higher pitch and prolonged, very few râles on long breath after cough; doubtful modification in the percussion note; back showed no râles; respiration less distinct at bases than at top; voice-sounds more distinct at the top; heart regular; no cough; no expectoration; some night sweats, but none at present; feels well, and is not losing flesh or strength. Glands in the axilla unchanged; in groin, rather harder and larger.

February 2d. Urine normal, acid, 1029, no albumen, few uric acid crystals.

[1] Read before the Boston Society for Medical Improvement, May 11, 1891.

February 4th. Dose, .0012 gm.

No special symptoms. On the 3d, bacilli in the sputum, 0; bacilli in discharge from the neck, 0.

February 6th. Dose, .0034 gm.

Headache in the afternoon; appetite slightly diminished; sputum, thin, watery, claret color, the color probably coming from the gums.

February 8th. Increased headache; dyspnœa; poor appetite and sleep; no increase of cough or sputum. On the 7th of February, examination of the sputum for bacilli was negative.

February 9th. Urine normal, acid, 1033, no albmen, many urates.

February 10th. Dose, .0024 gm.

Headache and general malaise; poor appetite and sleep; no especial change in the glands; surrounding infiltration diminished. On the 8th, bacilli in the sputum, 0.

February 11th. Gradual increase of cough; bacilli in the sputum, No. 1; no discharge from the neck, and no redness.

February 12th. Dose, .0048 gm.; 16th, .005 gm.; 20th, .005 gm.; 24th, .005 gm.; 26th, 0052 gm.

March 2d. Dose, .006 gm.

March 6th. Dose, .0072 gm. Abdomen distended.

March 10th. Dose, .0084 gm.

March 14th. Dose, .0072 gm. Glands in the neck diminished in size; abdomen less distended; is more comfortable.

March 18th. Hæmoglobin, 50 per cent.

March 21st. Was doing well until yesterday, when the temperature suddenly rose to 105°, and has remained there; much dyspnœa; rapid and weak pulse; lips cyanotic. Examination by Dr. Rotch shows dulness over the right lower back, with numerous fine, moist rales; increased vocal resonance and fremitus.

March 23d. Blood shows no bacilli. Is much worse; pulse rapid, small; face of ashen-gray; is conscious; respiration rapid and superficial; orthopnœa; unable to talk. Died suddenly.

Autopsy, March 24th, by Dr. Gannett, twenty-three hours after death, at 9 A. M. Body of medium size, well developed, somewhat emaciated. Marked enlargement of neck, due to the presence of a large number of nodules, varying in size from a pea to a walnut. These were of a moderate density, showing on section a reddish color, somewhat translucent and succulent. There was an extended development of similar nodules under the clavicles and into both axillæ, the largest of them being the size of a big plum. The under surface of the sternum showed an extended development of similar nodules; following down the trachea was also an extensive development of the same. The heart showed nothing abnormal. The lower portion of the left lung was darker and firmer than usual; on section, the surface moist, yielding on pressure considerable thin aerated fluid. The right pleural cavity contained by estimate two litres of clear serous fluid; the pleural surfaces covered with abundant fibrinous false membrane. The lower portion of the lower lobe was solidified, showing on section a reddish-gray, granular surface. The remaining portions of this lung were normal. The spleen measured twenty-one by six and one-half centimetres, and weighed twenty-nine grammes; section showed appearance of chronic hyperplasia. The peritoneal cavity was occupied by a mass of nodules like those already described, of mesenteric and sub-peritoneal origin, which formed altogether a mass the size of a large pumpkin. They ranged in size from a pea to an apple, the largest being markedly hyperæmic. There was also considerable development of similar nodules under Poupart's ligament. None of the nodules described, however, show any evidence of necrosis or degenerative change. The kidneys and liver were normal. The mucous membrane of the lower portion of the ilium showed elevated, flattened, opaque gray nodules, and the solitary follicles, here, and in the large intestine, were considerably enlarged. Bone marrow was of red and gelatinous consistency.

Diagnosis. — General: Pseudo-leucæmia. Special: Malignant lymphomatous nodules of the neck, axillæ, mediastinum, vertebral region, peritoneum in general; chronic hyperplasia of the spleen. Acute fibrinous pleurisy; acute fibrinous pneumonia.

A puzzling case. Temperature reaction. Bacilli in sputum once. No apparent effect from the treatment. No signs of tuberculosis upon autopsy.

CASE 33. Philadelphia. Admitted February 9, 1891. Service of Dr. E. H. Bradford. Nativity American, seven years old. Disease commenced in January, 1890, splint applied in July, 1890. Heart and circulation negative; chest negative; abdomen negative. Entered with a sensitive hip; no motion. Induration above the upper part of the thigh; no evidence of abscess.

February 14th. The condition of the leg is normal under extension. With extension omitted, there is strong tendency to abduction, flexion and inversion. Marked muscular spasms on attempted passive motion. Length of the right leg, twenty-three and one-half inches; left, twenty-three and one-half inches. Circumference of the right thigh, eight and three-quarters inches; left, ten inches. Circumference of the right calf, seven inches; left, eight inches. Hard, enlarged glands in the inguinal region.

February 20th. Dose, .0002 gm.

April 8th. Dose, .006 gm. Weight, 16.2 kilos, Treatment omitted temporarily.

Summary. — Number of injections, 22; amount used, 76.1 mg.; highest dose, 6 mg; highest temperature, 105°, after the sixteenth injection of 4.8 mg. Discharged, not relieved. No change that could be attributed to the treatment. General condition is, however, better.

CASE 34. Tiverton, R. I. Admitted November 19, 1890. Service of Dr. E. H. Bradford. Born in Rhode Island, eleven years old, of Irish and English parentage. Trouble began in January, 1889, after a fall on the right side, with pain at night, and lameness. Entered with hip flexed at 60°; no abduction nor adduction; slight area of fluctuation behind the trochanter; night cries.

February 14, 1891. Condition poor. Moderate discharge from the sinus in the gluteal region. Permanent adduction five degrees. No flexion; no motion possible in flexion, abduction or rotation. Night cries occasional and faint. Chest and abdomen negative.

February 20th. Dose, .0004 gm.

April 8th. Dose, .008 gm. Treatment omitted temporarily.

Summary. — Number of injections, 23; amount used, 111.4 mg.; highest dose, 8.4 mg.; highest temperature, 101.4°, after the fourth injection of 1.5 mg. Discharged, relieved. General condition improved. Night cries gone. Discharge from the hip less.

These cases seem to be classified as follows:

(1) Not relieved, twelve, — including Cases 13, 16, 17, 19, 21, 22, 24, 25, 29, 30, 31, 33.

Of these, Case 13 (lupus of the face) showed a very great and rapid improvement, at least apparently, at first, and then stopped.

Case 19 (empyema, with drainage-tube found in the pleural cavity) might readily be thrown out entirely, except that this is a record of the cases that have been under treatment, not a selected and revised edition. It certainly cannot be taken as proving anything for or against the material, although after surgical interference, the patient is very much better, and the wound is almost, if not entirely, healed.

Case 21 (suppuration of the toe, with slight pulmonary signs, but no bacilli) is reported better, as regards the pulmonary signs, by Dr. Mason.

Case 24 showed improvement at first, but was not better at the time last seen, (lesion of the back of the hand).

Case 25 (tuberculosis of the tongue, with pulmonary lesion at the apex) showed a marked improvement at first; but this improvement was arrested, and the disease is now further advanced than at the beginning of treatment.

Case 29 (disease of the wrist) seemed to present a peculiar appearance upon opening the wrist, inasmuch as there was a complete absence of anything that would account for the keeping open of the sinus there. The wound healed kindly after the removal of the thickened membrane of the sinus.

(2) Relieved, six,— including Cases 14, 15, 23, 26, 27, 34.

Case 14 (lupus of the face and thigh) was classed as relieved because of the marked diminution of the infiltration and thickening of the thigh; of the equally marked and similar change in the condition of the face; and the improvement in the general condition of the patient. All the ulcerative patches were not closed, and at the date of the last observation (May 3d), there seemed to be indications of a renewal of the active process, but, of course, the best that can be done in a report like the present, is to state the condition at the time that the report is made up.

Case 15 (tumor in Douglas's pouch — no real evidence of tuberculosis) showed a very great and marked improvement in general condition, up to the time of the attack of measles. There was a constant and gradual increase in weight of ten pounds, a diminution of the local distressing symptoms; and this, following the contrary condition of affairs, and beginning with the injections.

Case 23 (enlarged and suppurating cervical glands) showed sudden enlargement of one gland, with discharge following the treatment; followed by a cessation of any reaction, local or general; by the closing of the sinus; the diminution of size of the gland, and cessation of its activity; together with a marked increase in weight.

Case 26 (disease of the ankle — bacilli found in the discharge) improved afterwards enough to have motion in the joint; no bacilli were found afterwards in the discharge from the ankle; and there was a change for the better in the general condition.

Case 27 (hip disease) showed a marked improvement in the general condition; a diminution of the discharge from the hip, and a diminution in the subjective symptoms.

Case 34 (hip disease) general condition improved; discharge from the hip less; subjective symptoms less.

(3) Much relieved, two, — Cases 20 and 28.

Case 20 (pseudo-leucæmia) after leaving hospital, suffered from a sharp febrile attack, accompanied with great enlargement of the glands (situated principally in the cervical region), lasting for three or four days; followed by a rapid diminution in size of the glands and a marked improvement in the general condition, that has held up to within a week (more than six weeks after the cessation of treatment). The case is an exceedingly puzzling one. The patient certainly felt himself, that a most extraordinary change for the better had taken place in his condition. The enlarged glands were, at the time of last inspection, remarkably diminished in size.

Case 28 (hip-disease, ulceration of the cornea, enlarged cervical glands) showed a great gain in general condition; the ulceration of the cornea is arrested; the cervical glands are normal in size; the discharge from the hip is much less; and the patient is about on crutches.

(4) Died, two, — including Cases 18 and 32.

Case 18 was desperate from the start. The patient had been running down as rapidly as possible for some time before entrance; had been operated upon four or five times for the removal of the affected glands; had pulmonary lesions in addition to amyloid kidneys, spleen, and probably liver. She died of exhaustion, about two weeks after removal from the hospital, and four weeks after the last injection. At present, no considerations of feeling or friendship should permit the treatment of such a case.

Case 32 (pseudo-leucæmia) is one of the most interesting cases that have come under observation. There was marked temperature reaction during the treatment. Bacilli were found in the sputum once (on February 11th); and yet at the autopsy there was no sign of tuberculosis anywhere — in the gross appearances; nor have any certain microscopic signs yet been found, although the examination has not been thoroughly completed. At first, the case was supposed to be as perfect a one as could have been selected against the value of tuberculin in diagnosis (or indeed anything else); but the fact of the discovery of the bacilli in the sputum puts a different face upon the matter, and judgment in regard to it must be temporarily suspended. The death in this case was distinctly due to an intercurrent attack of pleurisy and pneumonia, and not to the injections.

In this series, as in the former one, there are no cures to report; and, equally as in the preceding series, the judgment passed upon each case is necessarily only a temporary one.

The next class into which I have divided the cases, is that of those treated for diagnosis. They were all treated at a time when more reliance was placed upon the use of tuberculin for diagnostic purposes, than is at present the case. There are eight of these, as follows:

SECTION III.

TREATED FOR DIAGNOSIS. — CASES XXXV–XLII.

Case 35. Providence. Admitted November 29, 1890. Service of Dr. C. B. Porter. Born in Massachusetts, twenty-one years of age, single, machinist.

Family history negative. Had measles; typhoid fever two years ago. The disease began in August, 1890, with pain below the right nipple, and a small tumor made its appearance. General health good; appearance anæmic; fair strength and nutrition; good appetite; fair sleep; skin pale; slight pain, at times sharp in the side and back; urine normal; abdomen negative.

Examination shows a well-developed and nourished man, with a tumor about three-quarters of an inch in diameter on the sixth rib, near the junction of costal cartilage; hard, non-fluctuating, not red or tender.

January 16, 1891. Physical examination by Dr. Tarbell negative. Tumor conical, with a base two and one-half inches in diameter, and a height of one and three-quarters inches.

January 17th. Urine normal, acid, 1014, no albumen, many amorphous urates.

January 18th. Dose, .002 gm. Headache; increased pain in the back and lumbar region; a marked fever, lasting for three days.

January 22d. No cough; no expectoration.

January 23d. Dose, .0024 gm. Pain increased in the lower back. Examination by Dr. Tarbell negative, except a very slight harsh respiration in the left back.

January 27th. Dose, .003 gm. General malaise; poor appetite; poor sleep; vomiting; pain increased in the lower back. The tumor has enlarged to a marked degree. Discharged from further treatment at his own request. Went home to await further changes.

Summary. — Number of injections, 3; amount used, 7.4 mg.; highest dose, 3 mg.; highest temperature, 102.4°, after the third injection of three milligrammes on the third day after the injection. Discharged, not relieved. Whether this patient was made worse or not by the treatment is an open question. The same febrile attack and disorders of digestion had occurred before.

CASE 36. Boston. Admitted February 12, 1891. Service of Dr. Bolles. Born in Medina, twenty-three years old, single, barber. Family history good. Denies venereal disease. Drinks slightly to excess. Smokes a great deal. Disease began thirteen months ago, with pain on the internal apex of the left tibia. In appearance, well developed; good strength and nutrition; fair appetite; good sleep; heart and circulation negative; breathing regular but rapid; urine (on February 17th) normal, acid, 1030, no albumen. The left leg shows a regular swelling, rather larger than an egg, on the inside of and just below the knee-joint, at the level of the head of the tibia; tender in all parts, non-fluctuating, apparently solid, not red, skin not broken.

February 18th. Dose, .0012 gm., followed by no reaction.

April 13th. Physical examination showed the right base back dull; diminished respiration; old pleuritic friction; subcrepitant râles.

Summary. — Number of injections, 3; amount injected, 9.6 mg.; highest dose, 6 mg.; highest temperature, 100.4°, after the third injection of six milligrammes. Discharged, not relieved. Specific disease suspected.

CASE 37. Boston. Admitted January 2, 1891. Service of Dr. Warren. Born in Massachusetts, twenty-four years old, single. Good family history. Disease commenced three years ago with ulceration in the nose and then on the lip. General health fair; menses regular; is anæmic; fair strength and nutrition; good appetite and sleep.

February 3d. Urine pale, acid, 1010, no albumen, abdomen negative. When twelve years old had diphtheria, and has been deaf ever since. The nose is entirely destroyed, and the bones of the septum and the turbinates are entirely gone. The necrosis extends to the base of the skull, and there is ulceration as far as the pharynx.

February 9th. Dose, .0006 gm. Had increased pain in the pharynx; pain was very unusual.

February 11th. Dose, .0018 gm. No change of any kind.

February 13th. Dose, .006 gm. Pain increased in the forehead. Any pain at all is extremely unusual.

February 15th. Dose, .0096 gm. Slight pain. The patient was given Shaw's Specific and sent home to take iodide of potash, and report from time to time.

Summary. — Number of injections, 4; amount used, 18 mg.; no temperature record kept.

April 25th. Improving rapidly under specific treatment.

CASE 38. Topsfield. Admitted January 29, 1891. Service of Dr. J. C. Warren. Born in Nova Scotia, about forty-five years old, married, housewife. Disease has lasted for sixteen years after the birth of her last child, beginning with varicose veins. Menstruation regular. Has had at least two children. Good appearance and strength; fair nutrition; good appetite and sleep; skin dusky; heart and circulation negative; no chills, fever or night sweats. Fourteen years ago, dark purple area appeared under the skin over the patella, which broke down, leaving an ulcer. Similar ulcerations appeared later, which healed, leaving a thick indurated red skin covering an area of about six inches, in some parts of which the skin has broken down. Outside of this red indurated area is a deep ulcer, with a slough in the centre. Above this is a red purple area, thick and distinctly indurated; and above this a dark-purple area less indurated. The skin of the whole leg about the knee is thickened and indurated, suggesting elephantiasis. No glands are to be felt. The knee is not painful, and the patient considers herself a well woman except the local trouble. Has had many physicians, and taken much medicine.

January 13th. Dose, .0012 gm. Bacilli in the discharge on the 29th, 0. Slight reddening of the diseased area.

February 3d. Dose, .0024 gm. Pain increased in knee. Urine normal, acid, 1032, no albumen or sugar, urates increased. Pain partly due to a dry dressing.

February 5th. Dose, .0048 gm. Headache; increased pain and swelling of the knee; bacilli from the discharge, No. 0. Could not walk as well after the injection.

February 7th. Dose, .006 gm. General discomfort.

February 9th. Dose, .006 gm. A piece punched out, and sent to Dr. Whitney, who makes the following report: "A general round-cell infiltration, with here and there enlarged nerves. In one place an area of necrosis. Syphilis?"

February 11th. Dose, .0072 gm.; 13th, .010 gm.; 15th. .0144 gm. No reaction after any of them. The diagnosis was negative and the patient discharged.

Summary. — Number of injections, 8; amount used, 52 mg.; highest dose, 14.4 mg.; highest temperature, 101.8°, after the fourth injection of six milligrammes. Discharged, not relieved. Specific disease suspected.

CASE 39. Charlestown. Admitted December 30, 1890. Service of Dr. J. C. Warren. Born in Maine, fifty years old, married, mechanic. Disease began in October, 1890. General health fair; poor appearance; fair strength, nutrition and appetite; good sleep; temperature, 97.8°; pulse 90; pain in elbow. The left hand and arm are swollen and œdematous; the elbow swollen, red, and painful on attempted movement. The probe grates on dead bone on the posterior surface of the olecranon.

January 1, 1891. Dose, .001 gm. General condition, appetite, and sleep poor: pain in the arm and elbow and abdomen, probably due to indigestion.

January 5th. Dose, .002 gm. Pain increased in the arm.

January 7th. Dose, .002 gm. Discharge from the arm slightly increased.

January 9th. Dose, .0025 gm. Pain in back and elbow. Subjective symptoms doubtful.

January 30th. Wound reduced to a small sinus, practically closed. Discharged (with a splint), to go to out-patient department.

February 28th. The wound is completely closed; power returning to the arm muscles; motion of the joint completely returned; has gained in health and strength.

Summary. — Number of injections, 11; amount of material used, 36.3 mg.; largest dose, 8 mg.; highest temperature, 100.8°, after the sixth injection of 2.2 mg. Discharged, much relieved. It can hardly be said that the treatment accomplished this result, although the patient himself thought so.

CASE 40. Orange. Admitted December 30, 1890. Service of Dr. C. B. Porter. Born in Massachusetts, twenty-nine years of age, married, housewife. No other diseases up to the time of injury. July, 1890, fell. General health that of a nervous, hysterical woman. Well developed; fair strength; good nutrition, appetite and sleep.

Examination showed the left elbow somewhat swollen; all motions possible were apparently painful; no evidence of old fracture. A fluctuating area over the head of the radius was about one inch in diameter. Ordered a phenyl poultice every four hours.

January 3, 1891. Dose, .0008 gm. No general reaction; no pain; no discomfort at seat of lesion.

January 5th. Dose, .0018 gm. No general or local reaction.

January 6th. Able to comb her hair this morning for the first time since the beginning of the trouble. Don't feel sick. Desires to go home, and decides to have no more treatment.

January 8th. Swelling in the elbow very much diminished. Free motion without pain. Discharged.

Summary. — Number of injections, 2; amount used, 2.6 mg.; highest dose, 1.8 mg.; no rise in temperature. Discharged, much relieved (but not by the treatment).

CASE 41. East Boston. Date of admission November 29, 1890. Service of Drs. Gavin and Bradford. Born in Canada, seventeen years of age, schoolgirl. Good family history. Typhoid fever three or four years ago. Disease commenced October 30, 1890, following typhoid. Swelling about the hip-joint, and half-way down the outer and posterior side. Thought to be thrombosis following typhoid.

January 4, 1891. Dose, .0006 gm. Slight headache.

January 8th. Dose, .0006 gm.

January 12th. Dose, .0012 gm. Slight headache; nausea in the afternoon.

January 13th. No swelling of hip, or increased tenderness, has been noticed. The reactions not having been satisfactory, the treatment was given up. General condition has been improving; gaining in flesh (January 20th).

February 2d. General condition excellent.

April 3th. Still in hospital.

Summary. — Number of injections, 3; amount used, 2.4 mg.; highest dose, 1.2 mg.; highest temperature, 101°, after the third injection of 1.2 mg. Discharged, not relieved. No reaction followed injections.

CASE 42. South Boston. Admitted January 6, 1891. Service of Dr. E. H. Bradford. Born in Scotland, fourteen years old, school-boy. Disease seven years old, resulting from a blow. Fair nutrition; urine high, acid, 1029, no albumen. The left leg, just below the crest of the tibia, showed a small superficial granulating area, from which there is a slight discharge; some thickening of bone felt about this area, but no sinus.

January 12th. Dose, .001 gm. Headache; slight nausea.

January 14th. Dose, .0016 gm.

January 16th. Dose, .003 gm. General condition good.

January 14th. Discharge from the granulated surface increased, and the surface was healed, with no pain. As the patient was showing almost no reaction and the wound had healed, treatment was omitted. Discharged, relieved.

Summary. — Number of injections, 3; amount used, 5.5 mg.; highest dose, 3 mg.; highest temperature, 100°, after the second injection of 1.6 mg. Discharged, not relieved by treatment, but much better.

Case 35 (a tumor on rib) showed a marked febrile reaction following the injection and lasting for several days. The same sort of febrile attack had, however, occurred before the treatment began.

In Case 36 (disease of the tibia), Case 37 (disease of the face), and Case 38 (disease of the knee), specific disease was suspected, — partially confirmed in Case 37 by improvement under iodide, and in Case 38 by the microscopic examination.

Cases 39 and 40 (affection of the elbow) both showed marked improvement after the injections; but in neither case could the treatment be held responsible for this improvement, although both patients felt that it was. In Case 39 there was actual improvement after surgical interference; and Case 40 was an apparent instance of extremely rapid and effective "mind-cure" in an hysterical woman.

Cases 41 (disease of the hip) and 42 (disease of the tibia) showed no reaction, general or local; and the treatment was dropped for that reason, although at present the indications seem to be that results might have been obtained if it had been carried further.

(To be continued.)

PROF. OSKAR HERTWIG, of Berlin, is about to publish an essay on "The Physiological Basis of the Effects of Tuberculin."

Medical Progress.

RECENT PROGRESS IN THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M. D.

(Continued from No. 4, p. 83.)

TREATMENT OF DYSENTERY.[11]

DR. H. A. FAIRBAIRN calls attention again to the advantages of irrigation of the large intestine and the thorough flushing of its contents. In the early stages the walls of the intestines are not liable to be weakened by deep ulcerations. The amount of fluid which may be safely used is three or four pints, since the capacity of the large intestine, as a rule, is about six pints. The temperature of the water, which should have been boiled or distilled, should be about 100° or 105° F., except, possibly, in the first or second administration when quite a low temperature appears of benefit. The patients are confined to bed, are deprived as much as possible of food, except whiskey well diluted. Peptonized milk in very small quantities, not more than a quart in twenty-four hours. If the patient will take no food for forty-eight hours it is a great advantage.

The liquid preparations of beef, with their concentrated salts are apt to be irritating. Eggs, scraped beef, or, when these are objected to, steak, roast and chop, with bread, make up the dietary. A cathartic may be administered at the beginning of the case. If there be nausea, calomel in small and frequently-repeated doses is the drug chosen, otherwise sulphate of magnesium. Salol is then ordered, and opium in some form if the pain demands. Naphthalin and corrosive sublimate may also be employed.

EPSOM SALTS IN THE TREATMENT OF ACUTE DYSENTERY.[12]

Powdered ipecac is the remedy which is most frequently used in the treatment of acute dysentery, and in India large doses of it are considered the best method for attacking the disease.

There are, however, objections to be used against the administration of large doses of ipecac in this disease. Its influence is depressing, and this action is promoted by the nausea and vomiting, and, further, the vomiting may become uncontrollable. The disease is one which is accompanied by much nervous depression, and it is important not to increase.

After observing a number of cases in which there were marked depressing effects from ipecacuana, Dr. A. W. Leahy began treating cases of acute dysentery with a saturated solution of sulphate of magnesium, following a recommendation of Bartholow's, who regards the administration of sulphate of magnesium as the most efficient treatment of this disease, particularly in the acute stage.

Dr. Leahy gives a table of nearly one hundred cases treated at Hyderabad among the poorer class of patients, the vitality of many of whom was at an exceedingly low ebb when they came under treatment. Out of ninety-five, three died; two out of these three cases were stated to have been in a moribund condition at the time of their admission to the hospital. It appears that, on an average, two days' treatment with Epsom salts is required to produce disappearance of dysenteric symptoms. The treatment subsequent to the production of this condition consists of an astringent mixture, with opium. The method of administration is to take a sufficient quantity of sulphate of magnesium to saturate seven fluid ounces of water, and to this saturated solution add one ounce of diluted sulphuric acid. The dose of this is a tablespoonful every hour or two in a wineglassful of water until it operates. Sulphate of morphine may be combined with it, or starch enemata with laudanum may be employed.

Dr. Leahy claims that in the earliest stages of dysentery this saturated solution of epsom salts acts like a charm; fever, if present, disappears; mucus and blood are wanting in the stools, which become copious, feculent, and bilious; the tenesmus ceases; the patient's anxiety diminishes; the skin acts well, and sleep follows the administration of the first few doses.

It is especially in acute cases that the sulphate of magnesium is so valuable; the more chronic the disease becomes, the less apparent are the advantages of this method of treatment. Dr. Leahy has ordinarily given a drachm of this saturated solution with ten drops of dilute sulphuric acid every hour or two until its effects become evidenced in the feculent character of the stools and their freedom from blood and mucus, or until the temperature has fallen, and the pain and tenesmus have ceased. When the stools have become normal in color and appearance, and the patient only passes two or three in the twenty-four hours, an ordinary astringent mixture of acid with laudanum or tincture of Indian hemp, or a pill containing extract of opium, is usually all that is necessary to complete the cure. It is, of course, imperative to diet the patient with great care.

This treatment Dr. Leahy compares with that by ipecacuanha as follows: It has no depressing action on the system, it neither produces nausea nor vomiting; it quiets and soothes the patient.

In twenty-seven cases of acute dysentery among Europeans all were successfully cured.

It is peculiarly in acute dysentery that the saturated solution of sulphate of magnesium will yield such excellent results. The more chronic the case the less likely is the remedy to prove of value.

SULPHONAL IN DIABETES.[13]

Dr. V. Casavelli has used sulphonal in diabetes with the following results: Sulphonal exerts a favorable influence upon the chief symptoms of diabetes, diminishing the quantity of sugar, also the polyuria and polydipsia. These results are obtained in a moderate degree by a dose of 15 to 30 grains *pro die*. They are more marked with a dose of 45 grains, which may be given for several days; 30 grains is well borne for a longer time, 45 grains creates no disturbance at first, but if persisted in for a time produces dizziness and excessive somnolence, which disappear upon the reduction of the dose.

The favorable effects of sulphonal are as evident with a mixed diet as with a strict meat diet; in the latter sugar was found in great quantity in the urine after sulphonal had been suspended.

In the same cases antipyrine was tried before sulphonal, but the effect produced by antipyrine was less marked than that by sulphonal.

[11] Brooklyn Medical Journal, No. 10, 1890.
[12] Lancet, No. 3501, 1890.
[13] Medicinische-Chirurgische Rund-Schau, Heft 20, 1890.

CHLORATE OF POTASSIUM POISONING.[14]

Dr. Lauderer, assistant in the medical clinic of Professor Leube, Würzburg, reports a fatal case of poisoning in a young man, eighteen years old, after taking an ounce of chlorate of potassium. It was intended to be used as a gargle, but he dissolved the salt in a glass of warm water, and drank the whole of it in two portions within half an hour.

The first symptoms, which came on shortly after the ingestion of the drug, were weakness, thirst, and dizziness; the more serious symptoms, the result of the action of the salt upon the blood, were acute anæmia, dyspnœa, cyanosis, continued vomiting, pain in the hypochondrium and near the umbilicus, icterus; liver and spleen both enlarged.

The amount of urine was very small, three and a quarter ounces in seven days, and contained little or no chlorate of potassium. It contained much albumen and sediment. The patient died on the sixth day without convulsions or other uræmic symptoms.

The autopsy, made by Professor Rindfleisch, gave the following: Œdema et hypostasis pulmonum, nephritis acuta cum infarctu hæmoglobinurico ex intoxicatione kali chlorici. Gastritis acuta, erosiones ventriculi. Enteritis et colitis acuta follicularis cum erosionibus in jejuno.

The case was under observation from the beginning, and was studied carefully, and the author gives much detail at length, besides some discussion of the observations of others. His conclusion is that chlorate of potassium should be excluded from our list of remedies, and certainly never used for children.

TREATMENT OF OBSTRUCTIONS OF THE BOWELS BY LARGE DOSES OF OLIVE OIL.[15]

Dr. E. W. Mitchell, of Cincinnati, reports two cases of successful treatment of obstruction by means of olive oil, this method of treatment being the result of a suggestion of Professor Langdon. One of the patients, a man, fifty-three years old, had had an operation for strangulated inguinal hernia on the left side, twenty months previously. When seen for his present trouble he had not been well for a day, there had been severe colicky pains and vomiting after each attempt to take food. Enemata were given on this and the following day, with little result. Morphine was given, and large enemata through a rectal tube, introduced as far as possible, produced no effect. Almost two quarts of dirty fluid was withdrawn through a stomach-tube. Two ounces of sweet oil were ordered to be taken every hour. Tympanites during the afternoon and early evening had rapidly increased. There was much prostration, no nourishment having been retained. During the night, half a pint of oil was taken. In the morning there was less prostration; there had been a small fluid passage. An enema now administered through a rectal tube (English gum catheter, No. 16) returned slightly discolored, and containing a trace of oil. There was a recurrence of vomiting, but the oil was continued. About noon the bowels began to move, and several fluid stools were passed during the following night. On the next day the stools became formed and contained pus in small quantities. The case was probably one of fæcal impaction — there was no evidence of typhilitis or perityphilitis.

The second case was that of a young man, twenty-two years old. The bowels had not moved for forty-eight hours, and he had been suffering from tormina and vomiting. Large doses of cathartics had already been taken. Thorough examination failed to find any evidence as to the point of obstruction; the hernial openings were clear, there was no point of tenderness, no tumor, the abdomen was quite tympanitic. He was treated by sulphate of magnesia, repeated clysters through a rectal tube introduced as far as possible into the bowel, and sufficient morphine to control extreme pain. This treatment was continued for two days with no benefit, the tympanites increasing, vomiting became stercoraceous, and the patient much prostrated. The administration of sweet oil was then begun; a pint was taken within a few hours, most of which was retained, although he had before been vomiting everything. Three hours after beginning the oil the bowels began to move, and a good recovery ensued.

Dr. Langdon mentioned in the same journal eight cases where relief had been obtained from large doses of olive oil.

TREATMENT OF INTERNAL HÆMORRHAGE.[16]

Dr. John Ferguson has given a very good outline of some of the ways in which a practitioner may render aid to his patients in this emergency.

Among the remote ways of treating internal hæmorrhage are, lowering the blood-pressure and changing the character of the blood itself. It is very apparent that the amount of blood that will flow through the rent in wall of any vessel must be greatly influenced by the total amount of blood in the system and the amount of pressure upon the vessel from within. This being the case, the first step to take in dealing with a hæmorrhage is to cut off the supply of liquids. In this way the amount of blood is kept down, while it becomes thicker and better fitted for forming a good firm clot in the torn or ruptured vessel. Another step in the same direction is to reduce the volume of blood by actively eliminating water from the system. The hypodermic injection of pilocarpine rapidly unloads the body of water and inspissates the blood left behind, lessening thereby the freeness of the flow. This would not, however, be suitable in cases of pulmonary bleeding. Other diaphoretics might be selected, according to the judgment of the physician.

Those purgatives that produce copious watery stools, and, at the same time, are not irritating or depressing, must be placed on the list of agents we may use for the relief of the sufferer entrusted to our charge. Of these purgatives there is none so good as Epsom salts. When given in saturated solution, without water, in free doses and often repeated, very free watery evacuations are produced, the amount of fluid in the vascular system is speedily lessened, and the hæmorrhage to this extent controlled. By maintaining this action for some time, the ruptured vessel has time to heal, because the pressure is largely taken off and it is put into the condition of rest. In addition to this, the blood is thickened. In some cases of cholera — sporadic or epidemic — when rice-water stools have been very abundant, the blood becomes so reduced in volume and so inspissated as not to flow from a wound made in a large vein. In the event of hæmorrhage due to ulceration in typhoid fever, this plan could not be had recourse to, though it might be used with advantage in the bleeding from a gastric ulcer. In the hæmorrhage,

[14] Deutsches Archive. f. Klinische Medicine.
[15] Cincinnati Lancet-Clinic, No. 3, 1891.
[16] New York Medical Record, December 1, 1890.

often so free from soft and rapidly-growing uterine fibroid, it is especially useful if continued long enough — say for months.

In severe post-partum hæmorrhage, the medical attendent may try ergotin hypodermically, or hot vaginal or rectal injections, but this may fail. It is a belief, not yet quite dead, that the uterine sinuses are closed by clots. This is quite erroneous. The uterine vessels and sinuses are interlaced by muscular fibres, and it is the contraction of these that arrests the hæmorrhage. This muscular tissue, as it were, ligates the vessels that would bleed, and, so long as the contraction is good, there is no danger. For the maintenance of the tonic action of the muscular tissue in the uterus the application of heat to the lumbar portion of the spine has been found very useful. It stimulates this portion of the nervous system by bringing more blood to it. There is a great influx of nerve-energy to the uterus, and contraction is brought about. It is true that the uterus seems to be very independent of the spinal cord, and labor may take place in a paraplegia. This does not, however, invalidate the fact that heat — applied to the spine by a sponge dipped in hot water — does much good in the way of rousing the uterus into action. But when all things fail, as a last resort we may tampon the uterus and vagina thoroughly with iodoform gauze, or, if this is not at hand, some cloths to which glycerin is added. The bleeding is soon arrested, the uterus begins to contract, tone in the walls is secured, and one can feel at ease that the patient is out of all immediate danger.

In capital operations, such as the removal of large and vascular tumors from the neck, the female breast, etc., the plan is to simply tie the bands around the legs and arms close up to the body. This arrests the return of blood to the body, while the flow of blood into the limbs still goes on. By this means a very large amount of blood in the body is rapidly collected into the four extremities and the pressure is taken off the central vessels. This method gives time for the use of other means.

BORIC ACID IN CONSTIPATION.[17]

Herr Flatau has suggested to the Medical Society of Berlin the use of boric acid in chronic constipation. In cases where the lower part of the rectum protrudes through the anus, and remains visible after powerful contractions of the levator ani and sphincters, the quantity of forty-five grains of boric acid is either dusted or rubbed on the mucous membrane in sight. In cases in which the mucous membrane is not visible it must be insufflated. It is important that the medical attendant should carry out the procedure himself, at any rate at the commencement. The patient should then keep quiet for a time. In from an hour to three hours peristaltic action will be observed in the colon. He has never seen a failure from this method of treatment, nor has he seen a case where the patient got so accustomed to it that it ceased to be effective. On the contrary, if carried out systematically daily, permanent improvement in time takes place, and normal peristalsis is secured.

HÆMORRHOIDS.[18]

Dr. W. R. Thomas is very confident that the majority of cases of hæmorrhoids we meet with are entirely preventable, and that many of those which are far advanced can be cured by medical treatment alone, but it is necessary when treating them to give due consideration to all the causes and treat each one. Among the factors which have to do with the production of hæmorrhoids, and each one of which should be considered in the treatment, there are many: The valveless condition of the portal veins; gravitation; obstruction owing to hepatic, cardiac, or pulmonary disease; sedentary habits; excessive eating and drinking; excessive obesity; and a too frequent use of purgatives.

For successful treatment, the patient should have a daily movement of the bowels regularly. Sponging the anus and surrounding parts with soap and cold water, is a very efficient application, thus removing acrid fluids which, during the ensuing day, would irritate the skin. A large proportion of vegetable diet, and a smaller proportion of meat. Cases of hæmorrhoids with constipation may sometimes be cured by attention to this alone. Sufficient exercise is of much importance. Some patients may obtain relief from a daily injection of as much water as can be retained for four or five minutes with comfort. Lukewarm water may be recommended at first, but as soon as the patient can bear it, cold may be ordered. Those who suffer from hæmorrhoids should, if possible, give up taking stimulants entirely.

[17] Medical Press and Circular, 1890.
[18] Lancet, No. 5, 1891.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

REGULAR Meeting, Monday, April 13, 1891, the President, Dr. FREDERICK I. KNIGHT, in the chair.

Dr. H. H. A. BEACH read a paper on,

COMPRESSION IN THE TREATMENT OF ANEURISM.[1]

DR. O. K. NEWELL: The chief thing that strikes me as of interest in this paper is the system of carrying out the preliminary pressure for the development of a collateral circulation. I am sure in what cases of aneurism I have seen treated, where the ligation has been made, preliminary development of collateral circulation has not been undertaken. I do not know that I have ever seen it done as a first step to the operation. I should think it would be one of great importance in avoiding gangrene, and would affect the mortality of cases very much.

DR. A. POST: I should like to ask how long the patient's syphilis had lasted?

DR. BEACH: The exact dates cannot be given. The patient was unable to furnish a complete history. The symptoms were ulceration, persistent headache, sore throat, loss of hair. Corroborative of the foregoing, an acknowledgment of the disease. As to the bearing of syphilis upon aneurism, I must confess that I do not believe that because aneurism happens to coexist in a patient with the history of syphilis, the aneurism must necessarily result from syphilis. The latter, we know, is likely to affect the smaller vessels, whereas atheroma, so commonly associated with aneurism, is more apt to be found in the larger trunks or secondary branches, where also aneurism is frequently found.

[1] See page 100 of the Journal.

DR. A. POST: That is an exceedingly interesting subject, namely, the connection between aneurism and syphilis. I hoped Dr. Beach had some more definite ideas in regard to the time that had elapsed. It evidently is some years in his patient, which is, I believe, the usual interval. Certainly syphilis is but an occasional cause of aneurism, if it is a cause at all. I am a little surprised that Dr. Beach thinks it necessary to take such pains to establish the collateral circulation. The cases upon which I have been obliged to operate in the popliteal region, the lower end of the femoral at least, have been traumatic mostly, and the collateral circulation has established itself very readily, although the operation was done immediately. In only one case out of four did I have any gangrene, and in that case it involved only the toes. That was a case in which the rupture of a vessel was followed by very great swelling before the operation took place.

DR. HOMANS: I have had no experience in the mechanical compression of an artery for the cure of aneurism except as I have seen it practised by others. Of late years I have had very few cases of aneurism at the Massachusetts General Hospital. I remember one quite remarkable case of continuous compressing, where Dr. West sat up a couple of days and nights and etherized the person, and I think the case was cured. I can recall three cases of my own in which the femoral was tied at the apex of Scarpa's triangle, and all did perfectly well. It has always seemed to me that that was the easiest and most successful way of treating an aneurism, as far as my experience and observation have gone. I have lately had a case at the hospital which would seem to show that the preliminary establishment of collateral circulation is not always necessary. A man was brought in who had been hooked by a cow. There was no pulsation in his femoral or in the arteries of his leg. There was a little blood coming out of the scrotum. The cow's horn had evidently torn off the right external iliac artery. Pulsation has never returned in the femoral. The man has recovered completely. It is a remarkable case, and one of the class which has been illustrated on a larger scale by the cases of ripping open the pregnant uterus of Indian women by buffaloes, of which Dr. Harris has reported several cases followed by recovery. I only mention this case to show that preliminary establishment of collateral circulation is not always necessary.

DR. BEACH: The question of compression or ligature, in the treatment of aneurism, is so broad in all its bearings, that the success or non-success of a few cases would hardly stand as competent evidence either way. Instead of a small number of isolated cases, examine a series. For instance, one, where out of twenty-two cases of ligature twenty are successful, in which compression had been previously tried unsuccessfully so far as stopping the aneurismal pulsation was concerned, but successful in establishing an adequate collateral circulation and so saving the limb. Again, compare such a series with another of ten cases where the femoral artery was tied without the preliminary compression, and three patients died of gangrene. We know that after ligature pulsation returns. It has done that in a number of cases. Ligature does not do away with pain altogether. It may be succeeded during the establishment of a collateral circulation. The pain in this particular case was not in the neighborhood of the compression. It was in the knee, from the pressure on the adjoining nerves of smaller vessels which were becoming enlarged. It was the pain incidental to the establishment of a collateral circulation.

DR. W. F. WHITNEY presented the subject of

THE PATHOLOGICAL ANATOMY OF THE APPENDIX CÆCI, WITH SPECIAL REFERENCE TO ACUTE AND CHRONIC APPENDICITIS [LANTERN ILLUSTRATIONS].

DR. FITZ: One of the points made by the reader related to fæcal concretions. The importance of their presence, he suggested, is perhaps rather greater than is usually recognized. In a considerable proportion of cases they are found, but they are very often seen where there is no appendicitis, and may be present a long time, as one of the photographs showed, where a considerable dilatation had taken place, which was filled with a large concretion. For a mass of that size to have formed must have required a long time. I think Dr. Whitney will agree with me that the special contributions which are to come in the way of the pathological anatomy of the appendix are to be derived from material which is furnished by the surgeon, such as he has collected and is now examining. The pathological anatomy of the appendix has hitherto been studied in cases where the patient died during an acute attack, or lived so long that the immediate disturbances were overcome or where the inflammation had undergone practically a spontaneous cure, the vestiges being left behind. In fact, the same sort of history is being gone through with what pathologists have experienced in connection with inflammation of the Fallopian tubes. Such an appendix as he has shown to-night, and which was so illustrative of the changes in chronic appendicitis, is a sort of appendix I do not remember to have seen before the days of surgical operations in this region. The appendices which it is particularly important to see and study with reference to treatment are those of which Dr. Whitney has already a number, where with symptoms of acute appendicitis, very often a primary attack, the appendix after removal shows no perforation. It is very important, if possible to discriminate clinically such cases from those in which a perforation is found, for the indications for operative treatment are much more urgent where perforation exists than where it does not. By comparing the symptoms and the results of the microscopical examinations of the specimens removed at the early operation, we shall very likely get satisfactory evidence for our guidance on this point.

Many of the cases of chronic appendicitis, where there may be ten or twelve attacks in a period of months or years, and where the appendix is removed during an intermission, are undoubtedly cases from which the patient would recover if left alone. The attacks may last only two or three days. The indications for operation in this class of cases have been presented by Dr. Porter in his recent paper. We shall all be much interested to hear the further progress Dr. Whitney makes in these investigations, which will doubtless add materially to our knowledge of the subject.

DR. CUTLER: Amongst the interesting things Dr. Whitney spoke of was one with reference to the difficulty of injecting the appendix from the cæcum. That is in accord with some of the experiments performed by the German observers. Doubtless, Dr. Whitney's further investigations will throw some light on that point.

DR. FITZ: In the appendices of infants and young

children the existence of a valve has been described by Gerlach, and spoken of in many of the works as explanatory of the greater frequency of appendicitis in young children. I think Dr. Whitney found it difficult to inject the appendix not only in young children, but in older children.

DR. CUTLER: I think that was the case with the observers I have alluded to. They took appendices from persons of the ages usually affected by appendicitis.

DR. MUNRO: I think Quain speaks of a valve existing in the appendix of the adult.

DR. FITZ: Dr. Munro will probably agree that it is very difficult to find in the adult a valve in the appendix.

DR. MUNRO: There is a valve-like opening.

DR. FITZ: I have often sought to demonstrate a valve in the appendix of the adult, and have never seen anything that deserved the name of a valve.

DR. CUTLER: Is there anything in the anatomy of the opening in the appendix similar to that in the ilium? If the cæcum be distended, the opening is distinctly a slit, and the tighter you distend it the more distinctly slit-like it is, as one sees it after death. Does that same condition obtain during life?

DR. WHITNEY: I think not. In reference to the valve which Gerlach mentions, I am not sure that I know exactly which it is. The number of folds varies greatly at the opening of the appendix, but there is one that usually covers it to a greater or less extent in every case. This in moderate distention of the intestine is pressed over the opening, but in hyperdistention of the gut is forced open again, as can be seen in the specimens injected with alcohol under pressure.

DR. BEACH: As demonstrator of anatomy at the medical school for some years, I can testify to the difficulty with which the appendix is injected from the intestine. With reference to the matter of concretions, I reported a case twenty years ago in the New York *Medical Journal*, where, at the autopsy of a patient of the late Dr. Hosmer, I found a concretion at the sloughing end of the appendix lying in a bed of pus. Upon careful examination, the concretion proved to be made of oat-meal hulls cemented together by fæcal matter. The mass was very hard, and from its surface projected many needle-like points.

DR. O. H. MARION reported

A CASE OF TUBAL PREGNANCY.

The patient, a married woman, thirty-four years of age, had always been well until a week ago last Saturday, when she was taken with sudden pain with urgent desire to go to the water-closet. While there she fainted. When I saw her a little later, there was tenderness over the right ovary. The next day she seemed quite comfortable excepting the pain in the abdomen on the right side, and feeling faint on any motion. That night I was called at 7.30 and found her in a state of collapse. Reaction took place after three hours, at which time she said she never had such pain in her life. Monday morning there was felt through the vagina a little mass at the back of the uterus and a little to the right, non-fluctuating and non-pulsating. Pressure on it made her faint and hurt her quite a little. Tuesday morning she looked badly blanched, and as I drew her water that morning the parts about the vulva seemed very pale. I made another examination and again felt this mass. I thought I had to do with internal hæmorrhage and, possibly, tubal pregnancy. My brother saw her in consultation, and was of the same opinion. That afternoon Dr. Baker saw the case, confirmed our diagnosis, and advised operation, which was done Wednesday morning.

DR. BAKER: The case was very interesting from the fact that there had been no irregularity in her menstruation. The menstruation had occurred last on March 12th, and had been regular in February and January. In February and in March there had been, after the regular flow, a little dribbling for several days; and after the period in March this had gone on for ten days or two weeks. There had been noticed no shreds discharged in the flow, and none of the other symptoms of early pregnancy. The absence of the ordinary symptoms, the suddenness of the attack, the great collapse, were the marked things in the case. The vaginal examination showed a soft mass at the right and a little behind the uterus, which deflected the uterus off towards the left. I felt that we had to deal with a case of tubal pregnancy, and an operation was done. The operation was rather a tedious one, from the fact that so much of the broad ligament had to be stitched like a saddle stitch. The amount of clots turned out of the peritoneal cavity was very great. The cavity was thoroughly washed out and closed, and the patient has done very well.

DR. WHITNEY: The point of interest in the specimen was the size, and the possibility of making the diagnosis of its age. It was not much larger than the end of the thumb, and the microscopic examination showed very imperfectly formed villi. We have no absolute date as to menstruation. There is nothing in the specimen that would be incompatible with thinking it was over three or four weeks at most in formation. Of interest is also the fact that in the ovary removed there was quite a large retention cyst, and no corpus luteum that would point to pregnancy. If this is a case of Fallopian pregnancy, it must be one of migration of the ovum across the abdomen from the other side.

DR. FITZ: Were the clots in the abdomen sufficient to give rise to dulness on percussion before the operation?

DR. BAKER: There was over the lower hypogastrium decided dulness. I remember percussing there first and then using the catheter, and still finding dulness on percussion. The whole of the pelvis seemed to be filled with clots.

DR. STRONG: There is very little to add to the description of the patient's condition at the time I saw her, additional to what has been said by Dr. Baker and Dr. Marion. One point is interesting with regard to the examination which I made when the patient was etherized just before the operation; that is, the location of the tumor was distinctly to be felt through the vagina on the right extending behind the uterus, feeling about the size and shape of a Bologna sausage, but in pressing down upon the abdomen I could make out no upper limit to the swelling. The thing that impressed me very much about the case was the typical history, — pain, faintness and collapse.

To-day I saw another case with exactly the same typical history, in the Out-patient Department of the Massachusetts General Hospital. This woman had passed over one period; then menstruation returned, as she supposed, and she had been flowing for about a

month, a little each day. Two days ago, early in the morning, while lying quietly in bed, she was awakened at 5 o'clock by most terrible pain, which she described as in the left side, from which she fainted. After recovering consciousness she got up and moved about the room, and fainted twice more. The rest of the day she spent in bed. This morning she complained of a good deal of pain and tenderness, and I could feel on the right side a mass which, without ether, exactly simulated the mass felt in Dr. Marion's case with this exception, that the external hand found no effusion of blood or fluid masking the upper abdominal border of the tumor. The patient's condition showed that there had been no serious hæmorrhages. If in this case, which from its history is so strongly suggestive of tubal pregnancy, there has been a rupture, then the blood is entirely confined within the broad ligament.[2]

Dr. Cabot showed a specimen of

FIBRO-MYOMA OF THE UTERUS REMOVED BY HYSTERECTOMY.

The tumor had existed for a number of months, but only within three months had it been associated with severe hæmorrhages from the uterus. The condition explained this history very well; the tumor was an intramural fibro-myoma, which had recently broken through and projected in a polypoid form into the canal of the uterus. The hæmorrhages, no doubt, had followed since the breaking through of the tumor into the cavity of the organ. The operation was followed by uninterrupted recovery, and the patient has already gone home well.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Stated Meeting, May 18, 1891, the President, S. B. W. McLeod, M.D., in the chair.

Dr. T. J. McGillicuddy read a paper on

THE HUMAN MAMMÆ AND THEIR ANOMALIES.

The first part of it was devoted to a consideration of the anatomy and physiology of the milk glands, as taught by the best and latest authorities. Passing on to their anomalies, the writer said that it was commonly noted that the two mammæ in very many cases were of unequal size. Absence of one, or both breasts, was very rare, but Hutchinson reported a case where both breasts were congenitally absent, and Paull a case where one breast was lacking. Mammæ of infantile size were generally accompanied by some ovarian defect, and, on the other hand, a too early and too great development of the breasts accompanied precocious development of the sexual organs.

Polymazia was much more frequently found than amazia, and supernumerary nipples were said to be quite common. In fact, rudimentary mammæ and nipples occurred, according to some writers, at least once in every five hundred individuals. Excess of formation here had been looked upon by theorists as a return in the direction of an earlier type, or a condition of atavism; and Meckel had stated that the earliest of our species had five mammæ, two pectoral, two axillary, and one near the navel. Extra mammæ were most frequently found in the axillæ or beneath the normal mammæ; but they were also to be met with in the groins and on the thigh, abdomen, and back. The axillary glands might have a nipple, or only a minute orifice, or again, the milk might exude from several small orifices. Barth reported the case of a girl with a nipple below the lobe of the right ear, and it had an areola and increased in volume during menstruation. The number of these supernumerary mammæ might vary from one to half-a-dozen.

Marked hypertrophy of the nipple alone was occasionally met with, and Dr. McGillicuddy had had a case where the diameter of the nipples was too large for the infant's mouth, and an artificial nipple was required in order that it might suckle. A breast might have two nipples, but absence of the nipple was very rare. Imperfections of the nipple were much more common. Supernumerary nipples and mammæ, according to Sutton, were more common in men than in women. In some few cases the axillary glands were really continuations of the lobules of the mammæ which were prolonged outward beyond the limits of the breast.

The writer referred to several cases of anomaly which had come under his personal observation.

Case I was that of a woman, twenty-six years of age, in whom the right breast and pectoral region were at least one-half larger than the left; a condition which she ascribed to the fact that she nursed much more frequently from the right breast than the left, on account of the latter secreting but a scant supply of milk.

Case II. On March 3, 1891, Dr. McGillicuddy attended Mrs. McA., aged twenty-four, in her second confinement. She stated that about the third month in each of her pregnancies, the axillary glands, which previously had been flat and gave her no inconvenience, filled with milk. On examining them, a large brown areola, of a lighter shade than that on the breasts, was found, but no sign of a nipple. The milk, which flowed continuously, but most freely while she was nursing her infant, exuded through the pores of the skin; and the condition was very disagreeable to the patient, as it kept her clothing constantly wet and soiled.

Case III was seen through the kindness of two medical friends. The patient was a young married woman of nineteen, whose second child was born March 8, 1891. She had not nursed her former child. Four days after labor she found milk flowing from the left axilla, and on examination, two rather large orifices and two or three smaller ones were seen. Through these milk exuded constantly, and in greatly increased quantity when she was nursing.

Case IV was a single woman, twenty-six years of age, with a supernumerary gland in her right side, extending from the seventh to the ninth rib. It was of an oval shape, following the intercostal space, and for fourteen years had been subjected to the pressure of a corset. During her menstrual periods there was pain in all three mammary glands.

Case V was a male, thirty-five years old, with two supernumerary mammæ in the abdomen, one on a line with, the other a little below, the umbilicus. The nipple of the one on the left side was four and one-half inches, and of the one on the right side three inches, from the umbilicus.

Case VI was also a male. He was forty-six years of age, and had a supernumerary mammary gland on the thigh, which a sister stated was first noticed at

[2] The patient was operated on two days later in the hospital, and the mass was found to be a small ovarian cyst. No explanation for the patient's history could be found.

birth. It was as large as the normal breast of a young woman, with a perfectly smooth nipple, and its lobular structure could be distinctly felt.

CASE VII was a young man who had a perfect but diminutive supernumerary nipple placed about two inches below the normal nipple on the left side.

CASE VIII, an infant, seven weeks old, had a supernumerary nipple in a very uncommon location, namely, on the chest, midway between the normal nipples. It was slightly larger than the latter.

CASE IX. Miss R., aged twenty-six. Neurasthenic temperament. Very delicate, and frequently hysterical. No glandular development whatever can be detected; the condition being the same as in the male breast, with simply nipples alone.

CASE X. Miss F., aged eighteen. When thirteen years old, as the result, it was supposed, of a blow, the right breast began to develop rapidly, and increased until it reached the normal size in young women of twenty; the other breast in the meanwhile remaining undeveloped. At present the breasts are normal and the same size, and menstruation is regular.

According to Park, there had previously been some fifteen cases of polymastia reported in American medical literature. Operative interference, Dr. McGillicuddy said, was not indicated under ordinary circumstances. The flow of milk in some instances was more or less inconvenient, but belladonna and strapping would probably be all that was required in most cases. The presence of many of the anomalies referred to, was generally not suspected until they were discovered by lactation, and like many other conditions, they were considered extremely rare until they were especially looked for. Photographs or drawings of most of the cases reported in the paper were exhibited.

DR. LEWIS SMITH read a paper on

RECENT MODIFICATIONS IN THE TREATMENT OF DIPHTHERIA.

Dr. Smith thought that there was now no question whatever that the Klebs-Lœffler bacillus was the true cause of diphtheria. It had also been demonstrated, he said, that this bacillus never penetrates the interior of the body, and that its action is restricted to the surface on which it happens to alight. By its irritating effect it caused the pseudo-membranous inflammation upon the mucous or cutaneous surface, but as it never occurred elsewhere than upon the surface, and so was soon conveyed by the blood or lymph currents to internal organs, it could not in itself produce the systemic infection from which so many victims of diphtheria perished. This was now believed to be caused by a chemical substance generated by the bacillus, and, according to Brieger, composed principally of carbon, oxygen and nitrogen, but also containing a little hydrogen and sulphur. This substance had very poisonous properties, and it was very readily taken up by the blood-vessels and conveyed to every part of the body. It was this which caused the nephritis, granulo-fatty degeneration of the heart-muscle, and other lesions incident to the systemic infection. The extreme contagiousness of diphtheria was well known to the profession, and numerous instances had been reported showing the tenacious attachment of the diphtheritic virus to objects and its prolonged vitality; so that an infected article or room might communicate the disease months or even years after the infection had occurred.

These facts, he said, should be borne in mind in considering the local as well as constitutional treatment. In speaking of the hygienic treatment he said it was often best to aid digestion by administering such pepsin preparation as wine of pepsin or essence of pepsin with each feeding. For patients with feeble digestion the pre-digested foods, such as peptonized milk, beef peptonoids and sarco-peptones, were often very useful. When there was difficulty in swallowing, from the severity of the pharyngitis or from palatal paralysis, rectal alimentation by means of predigested liquid food, administered through an elastic catheter introduced far enough to reach the sigmoid flexure, was called for. Alcohol in some form was useful in all forms of the disease, and in severe diphtheria, as after the bite of a venomous reptile, large and frequent doses of alcohol were required to antagonize the poison. The indication for the use of alcohol was apparent when it was remembered that it had been demonstrated by actual experiment that alcohol diluted to one part in five, applied to the cornea of a rabbit inoculated with the Klebs-Lœffler bacillus, will prevent the development of the specific inflammation; destroying the bacillus or neutralizing its action.

In considering the local treatment Dr. Smith said the important fact should be borne in mind that bacteriologists have recently found the Klebs-Lœffler bacillus upon healthy mucous surfaces, and therefore without any pathogenic action, in those who have been exposed to diphtheria. From this it was believed that the epithelium in its normal state, without any break or abrasion, whether upon the faucial or other surface, may afford an effectual barrier to the bacillus; but if the epithelium be injured or removed by treatment, traumatism or disease, at the point where the bacillus lodges, inoculation will occur and diphtheria result. Therefore, in the local treatment of diphtheria, such remedies as destroy the epithelium or impair its function should be discarded. It had long been known that in one exposed to diphtheria the specific inflammation attacks, by preference, such surfaces as are already diseased; and hence the opinion, confirmed also by recent observations, was gaining ground in the profession that local treatment which is irritating is injurious. Applications which, while they might destroy the pseudo-membrane, also destroyed the epithelium and underlying tissue, unquestionably did more harm than good.

D'Espine had observed the effect of various agents on the Klebs-Lœffler bacillus. Benzoate of sodium, 5 to 10 parts in 100, chlorate of potassium, 5 parts in 100, boric acid, 4 parts in 100, and sulphuret of sodium 2½ to 5 parts in 100, did not arrest its development. Under similar conditions it was arrested by corrosive sublimate, 1 part to 8,000, by carbolic acid, 1 to 50, by salicylic acid, 1 to 2,000, by chloral, 1 to 200, and by permanganate of potassium, 1 to 2,000. Of these remedies d'Espine especially recommended salicylic acid, as its toxic properties were slight and its application readily made. He would employ it in the strength of 1½ to 2 parts in 1,000, and even weaker in the case of very young children. Babes applied various antiseptic agents to the cornea of the rabbit after inoculation with the Klebs-Lœffler bacillus. A 20 per cent. solution of carbolic acid did not check the formation of the pseudo-membrane; the same was true of five per cent. solutions of citric and acetic acids. On the other hand, bichloride of mercury, 1 to 4,000, alcohol, 1 to

5, chloral, 1 to 50, and boric acid, 1 to 20, prevented the formation of the membrane, and did not irritate.

Dr. Smith said he had for some time employed bichloride of mercury dissolved in water, 2 grains to the pint, or 1 to 3,840. Each fluid drachm contained one sixty-fourth of a grain, and a child of five years could safely take one teaspoonful every two hours; the local effect of the drug being obtained upon the surface of the throat before swallowing. If the child were old enough that solution might be used as a gargle; and in nasal diphtheria it could be injected through the nostrils. Simon, of Paris, particularly recommended salicylic acid in the local treatment, and urged the necessity of prompt and frequent applications, so as to prevent, as far as possible, the formation of the toxic chemical product of the bacilli. The following was the formula which he generally employed for brushing the fauces:

℞ Acid. salicylic. . . . . 7½–15 grains.
Glycerin . . . . . 600 grains.
Infusio. eucalypti . . . . 900 grains.
Alcohol, for solution . . . q. s. M.

When the pseudo-membranes were very thick and adherent, Simon also applied equal parts of chloride of iron and glycerine from two to four times daily. Lœffler himself recommended the following gargle for diphtheritic patients:

℞ Carbolic acid . . . . . 15 drops.
Alcohol . . . . . 2 ounces.
Distilled water . . . . . 5 ounces. M.

Brandy or alcohol, the latter not more diluted than 1 part to 5 of water, employed as a gargle or spray, Dr. Smith thought was apparently deserving of trial.

After referring to various other topical remedies which had been recommended of late, he stated that several years ago he himself had proposed the following combination, which was still used by many physicians:

℞ Acid. carbolic. . . . . gtt. x.
Liq. ferri subsulphatis . . . . ʒ iij.
Glycerin . . . . . ʒ j. M.

After shaking the bottle, this was to be applied with a large camel's hair pencil every three or four hours to the inflamed surface. At present he recommended that the mixture should be diluted one-half with either glycerine or water, and the results obtained with the application showed that it was deserving of the confidence of the profession. With regard to the peroxide of hydrogen, he said that he had not had much personal experience, though it had been highly praised by some.

Before dismissing the subject of local treatment, he called the attention to the importance of prompt and efficient disinfection of the nares wherever indications of inflammation of the Schneiderian membrane showed themselves. For disinfecting the nostrils a saturated solution of boracic acid might be injected every two or three hours, or half a teaspoonful to a teaspoonful of the bichloride of mercury solution, two grains to the pint, care being taken that in the nasal and pharyngeal use of this agent, the quantity employed should be within safe limits.

Recent discoveries in reference to the cause and nature of diphtheria, although they showed the importance of early and efficient local treatment, indicated also the need of proper internal medication. The rapid and progressing deterioration of the blood in severe cases called especially for the use of iron, which, by its effect on the red blood corpuscles, the carriers of oxygen, increased the functional activity of organs and improved the general health. The tincture of the chloride of iron, inasmuch as it had a large percentage of iron, was quickly absorbed and assimilated, and produced a very beneficial local action on the inflamed surface, was commonly employed; and in those old enough it could be used as a gargle before it was swallowed. At the present time it was generally prescribed in hourly doses, in glycerine and water, of from three to ten drops according to age. It should not be given from a metallic spoon.

With the exception of the tincture of the chloride of iron, chlorate of potassium had probably been used in America more than any other medicine in diphtheria: but Dr. Smith thought a strong and altogether sufficient objection to its use was the fact that it was highly irritating to the kidneys, which in diphtheria are very liable to inflammation of a dangerous type. It seemed to him there could be little doubt that it had often been an important factor in producing or aggravating diphtheritic nephritis, of which not a few patients perished. Of vegetable tonics, quinine had been most frequently prescribed, but it was now generally admitted that that there was nothing in the action of this or similar agents destructive of, or antagonistic to, the diphtheritic virus. The benefit obtained from it was chiefly as a general tonic. Large and frequent doses did not apparently diminish the blood-poisoning in severe cases, or exert any controlling action on the cause of the disease, such as was obtained from germicide remedies. While quinine was often prescribed as an antipyretic in febrile and inflammatory diseases, the temperature in diphtheria, after the first two or three days, was not often so elevated that an antipyretic was needed.

As to the bichloride of mercury, he believes that statistics continue to show that when administered internally in safe doses, as well as when prescribed for local use, it aids in controlling the disease and in saving life. Employed internally it could be useful only in antagonizing or destroying the toxic albuminoid generated by the bacillus; and care should be taken that it should not be given too freely. In ordinary cases the following might perhaps be regarded as about the proper quantity which should be administered, in divided doses, in twenty-four hours. For a child of two years, one-sixth of a grain; for a child of four years, one-quarter of a grain; for a child of six years, one-third of a grain; for a child of ten years, one-half of a grain. A very good way of giving it was as follows:

℞ Hydrarg. chlor. corrosiv. . . . gr. j.
Alcohol . . . . . ʒ ij.
Elixir bismuth. et pepsin, q. s. ad. . ʒ iv. M.
Sig. One teaspoonful every four hours.

As to the time that the bichloride treatment should be kept up, in ordinary cases, it should probably be discontinued after one week, and sooner if diarrhœa occurred.

While calomel had been longer employed in the treatment of diphtheria, and was still recommended by some physicians of experience, the majority of the profession very properly, in his opinion, disapproved of its use; believing that it tended to weaken the patient and increase the anæmia. There was one use of calomel, however, to which he desired to call special attention. During the last few months at the New York Foundling Asylum the inhalation of the vapor produced by the sublimation of calomel had apparently proved a powerful auxiliary to intubation, and in some

cases prevented the necessity of intubation. As soon as hoarseness was observed in a diphtheritic case the child was placed in its crib, and a tent made over it about three feet in height by a sheet placed over sticks fastened to the corner posts. Placed in a wash-bowl, below the feet of the child, an alcohol lamp was ignited, and over it, upon a dish, ten to forty grains of calomel were slowly vaporized. This was repeated every two to four hours, according to the urgency of the case. A Sister of Charity and nurses in the ward had been salivated; but, so far as known, the patients had not been injured. On the other hand, in some instances patients recovered without tracheotomy or intubation, when, from the persistence of obstructive symptoms it was highly probable that pseudo-membrane had formed in the larynx. It was also a fact that since the vapor of calomel had been used in this institution the percentage of recoveries after intubation had been greater than previous to its employment. Of course it was necessary to use so powerful an agent with great caution.

Having remarked that in diphtheritic nephritis the best results were met with from tincture of the chloride of iron, Dr. Smith concluded with a few remarks on the treatment of diphtheritic paralysis.

DR. S. G. COOK said that for more than thirty years he had depended on a single remedy in the treatment of diphtheria and that was the biniodide or red iodide of mercury. He treated the disease as a blood-poisoning, and believed that the mercury antidoted the poison. Hence, he did not trouble himself about gargles, swabs or inhalations. He did not suppose that the red iodide of mercury was probably any more efficacious than the bichloride; but the former had proved so trustworthy an agent in his hands, that he did not like to give it up for anything else. When he was just commencing to practise he had found it very satisfactory in two or three epidemics of great malignancy, and he had continued to use it ever since. He was accustomed to give two grains of the first trituration of biniodide of mercury, equal to about one-fiftieth of a grain, every two hours.

DR. GEORGE E. HUBBARD spoke of the great efficiency of solution of chlorine, made from chlorate of potassium and muriatic acid, with perchloride of iron. It had a remarkable local effect, and was also very useful internally.

DR. LOUIS FISCHER said that of late he had met with extremely good results from the local injection with a hypodermic syringe of about six drops at a time of chlorine water. He had never seen any injurious effects produced by this method.

DR. J. MOUNT BLEYN thought that in every case of diphtheria, whether the nasal passages were implicated or not, it was very important to wash out the nose at once in order to prevent infection as far as possible. This could be accomplished by means of a fountain syringe, and the procedure should be repeated as often as the circumstances of the case required. As a stimulant he believed that in time pure ozone would be found preferable to alcohol.

DR. SMITH closed the discussion with a few remarks, and in the course of them he stated that in convalescence from diphtheria perhaps the best preparation of iron was the elixir of the peptonate.

THE late Mr. W. H. Gladstone suffered from a brain tumor, and died from the effects of an exploratory operation.

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TREATMENT OF EPILEPSY BY THE CONJOINED EMPLOYMENT OF BROMIDE OF POTASSIUM AND OF AN AGENT CAPABLE OF RENDERING THE NERVOUS CENTRES ANÆMIC.

UNDER this head, Poulet, of Plancher-les-Mines, in the last *Bulletin Général de Thérapeutique*, writes of a combination of bromide of potassium with Calabar bean, which has given him success in the treatment of obstinate cases of epilepsy where the bromides alone had failed. A favorite formula of his is the following:

℞	Bromide of potassium	100 parts.
	Tincture of Calabar bean . . .	35 "
	Water	470 "

Dose. — A tablespoonful, to be increased to a tablespoonful and a half, then two tablespoonfuls, daily.

A tablespoonful contains 3¼ grammes (or about 57 grains) of bromide and 1.08 grammes of the tincture. The medicine may be given in divided doses instead of in one full dose, half a teaspoonful being given at first twice, then three times, then four times a day.

Poulet reports five obstinate cases treated in this manner. These were cases where bromide alone failed to cure.

In No. 1, the fits were formally six or eight a week (*grand mal*). After a year of the new treatment, no return of the epilepsy. In this patient, the tincture of Calabar bean is occasionally replaced by eserine, in the dose of one milligramme to each gramme of bromide; the result has been the same. No contraction of the pupil has been observed during the administration of the medicine.

No. 2, a most obstinate case; had been epileptic for eight years. Eight or ten fits a day. Failure of bromides, given alone, also of bromides and picrotoxine. Definitive cure under bromides associated with tincture of Calabar bean.

No. 3 was also a case of chronic, inveterate epilepsy. Several months' treatment by the combination above specified has given exemption from all convulsive accidents.

No. 4 was a case of grave epilepsy at the menopause. Frequent daily vertiginous attacks ending in convul-

sions and stupor. At first the disease was successfully combated by bromide of potassium associated with picrotoxine; this combination afterwards failing, sulphate of atropia was substituted for the picrotoxine (six grammes of bromide of potassium, one milligramme of atropine, daily). The latter treatment has been kept up for a year, with complete cessation of the vertigo.

No. 5 was a case of cardiac epilepsy. The *grand mal* attacks were followed by hemiplegia, with stupor and hebetude (*état de mal*). A combination of bromide and digitalis caused disappearance of the epilepsy (eight grammes of bromide, associated with two grammes of tincture of digitalis in divided doses, daily).

Poulet terminates his article by the following conclusions:

The bromides remain the sheet anchor in the treatment of epilepsy, and by the term *bromides* we have especial reference to the bromide of potassium which alone is truly efficacious.

There are, however, a great many epileptics whose attacks are only mitigated or postponed, not completely suppressed, by bromide of potassium.

In such cases, if we associate the bromide with some medicament which possesses properties identical with those of the bromide (that is, being capable of anæmiating and decongesting the nerve-centres and paralyzing the system of voluntary muscles) we generally obtain results which are perfectly satisfactory in essential epilepsy, and even in partial or Jacksonian epilepsy, on condition that, in the latter, we begin by the specific treatment of the determining cause. The substances that have been the most successful are Calabar bean, picrotoxine and belladonna. In cardiac epilepsy, digitalis must be added.

We may indifferently substitute sulphate of eserine for the preparations of Calabar bean, sulphate of atropine for those of belladonna, and digitaline for digitalis.

THE ACTUAL NUMBER OF BACILLI IN TUBERCULOUS SPUTUM.

As tubercle bacilli are unevenly distributed in sputum, the common methods of examination afford a very imperfect estimate even of the relative number of the bacilli thrown off by different patients or by the same patient at different times. The method recently described at length by Dr. G. H. F. Nuttall,[1] not only makes it possible to calculate closely the relative number of bacilli in sputa, but allows an estimation of the total number appearing during the twenty-four hours. The method consists, roughly, in taking the total amount of sputum for the twenty-four hours, rendering it homogeneous by caustic potash, heat and shaking, diluting with a measured quantity of water, and dropping by an ingenious apparatus a known quantity for microscopical counting of bacilli.

Three cases are given by the author in which the number of bacilli passed in the twenty-four hours by patients undergoing the Koch treatment were calculated. In the first case the number expectorated before the commencement of the injections was something over two billion. During the injections with tuberculin the number rose to three and once to over four billion, and after the treatment had been given up returned to a little less than the original number. In the second case the number of bacilli varied between twenty and one hundred and sixty-five million before the injections, rose irregularly to two hundred and eighty million at the seventh injection, and then decreased to two hundred and sixty thousand after the sixteenth.

Two series of examinations of sputum after standing a certain length of time point to an actual multiplication of bacilli in standing sputum. It is also interesting to note that a great rise in the number of bacilli was observed to accompany the appearance of elastic tissue.

The author believes that his method will prove valuable in any experiments where it is desirable to introduce a definite number of organisms into culture media, disinfectants, etc. In point of accuracy it certainly far surpasses the loop method generally employed, one of the principal advantages being the saving of time. With such organisms as the tubercle bacillus this method will enable the experimenter to determine the number he is inoculating into an animal with a degree of certainty that has not been possible hitherto. Inoculations made under such conditions will clearly show the difference in degree of virulence possessed by various organisms, as also the relation between the number of bacteria introduced and the progress of the disease. This method brings us moreover a step nearer to solving the problem of the significance of involution and degeneration forms of bacteria.

[1] Johns Hopkins Hospital Bulletin, No 13.

MEDICAL NOTES.

Progress in Medical Education in New York. — According to the *Medical Record*, the Medical Department of the University of the City of New York makes certain special announcements this year which should have a very general interest, indicating as they do a decided advance in educational methods: First, the faculty have placed the college upon a true university basis; that is, the pecuniary interests of the college have been put entirely in the hands of a body separate from the faculty, while the latter receive fixed salaries, and are free to give their time and energy to advancing the standard of the curriculum unincumbered by financial care. This step makes the faculty quite independent of the number of students who may attend the college classes. A second change consists in making three years' course obligatory; and a third, perhaps the most important of all, consists in the introduction of the recitation system in place of the didactic lecture during the first and part of the second year.

MEDICO-CHIRURGICAL COLLEGE, PHILADELPHIA. — The following changes have been made in the faculty: Dr. G. E. Stubbs, Emeritus Professor of Clinical Surgery; Dr. W. S. Stewart, Emeritus Professor of Obstetrics and Clinical Diseases of Women; Dr. H. E. Goodman, Honorary Professor of Surgery, Clinical Surgery and Orthopedics; Dr. J. M. Anders, Professor of Principles and Practice of Medicine, Clinical Medicine and Hygiene; Dr. E. E. Montgomery, Professor of Obstetrics and Gynecology; Dr. Ernest Laplace, Professor of Surgery, Pathology and Clinical Surgery; Dr. W. F. Waugh, Professor of Clinical Medicine.

INSPECTION OF PORK IN CHICAGO.—The inspection of hog products at the stock-yards in Chicago is in operation, and in a short time every hog killed in Chicago will, it is hoped, bear the government stamp attesting its freedom from trichinæ. At present thirty microscopists are employed and a piece of the diaphragm is the part usually selected. Already many hogs have been condemned, though only a small portion of the daily output is submitted to such examination.

A SYSTEM TO DEFRAUD INSURANCE COMPANIES. — There is said to be a gang in Paris, the members of which thrive at the expense of the insurance companies. Their plans are simple. A man lets himself be run over. The driver is his accomplice. The authorities are appealed to. An insurance inspector reports on the case, making the slight injury sustained appear a very serious one. The profits are divided up. As occurrences like this became frequent, suspicion began to be aroused. The result was an inquiry, ending in the imprisonment of sixty-five people who were members of the gang.

A TETRATOLOGICAL CURIOSITY. — The *Semaine Médicale* contains an interesting description of some "Siamese Twins" which have been exciting the curiosity of the Parisians. Two girls, born in Bohemia, are welded together at the posterior part of the pelvis. Below this point, the condition of things is unique in more than one respect. At first sight there appears to be only one urethra, one vulva, and but one anal aperture. Although there is only one urethra, there must be two bladders, because the desire to pass water does not present itself simultaneously in both subjects. Again, though there is but a single vulva, there are two vaginas completely separated from each other by a well-defined septum and guarded respectively by separate hymens. The rectum is apparently unique for some distance up, for the desire to defecate is common to both subjects, but there are evidently two sets of large intestines. The anus, clitoris, and urethra are arranged anteo-posteriorly, but the two vaginas are side by side. Apart from this partial identity of structure, there are two distinct individualities, and one is able to go to sleep while the other keeps awake. The two heart-beats are not sychronous, and the sensation of hunger, thirst, etc., are not experienced simultaneously.

A BABOO'S PETITION. — The following petition, addressed by an East Indian "baboo" to the English governor, appears in the *St. James Gazette*: "Respectfully Sheweth. That your honor's servant is poor man in agricultural behavior, and much depends on season for the staff of life, therefore he prays that you will favor upon him, and take him into your saintly service, that he may have some permanently labor for the support of his soul and his family; wherefore he falls upon his family's bended knees, and implores to you of this merciful consideration to a damnable miserable, like your honor's unfortunate petitioner. That your lordship's honor's servant was too much poorly during the last rains and was resuscitated by much medicines which made magnificent excavations in the coffers of your honorable servant, whose means are circumcized by his large family, consisting of five female women, and three masculine, the last of which are still taking milk from mother's chest, and are damnably noiseful through pulmonary catastrophe in their interior abdomen. Besides the above named, an additional birth is, through grace of God, very shortly occurring to my beloved wife of bosom. . . . That your honor's damnable servant was officiating in several capacities during past generations, but has become too much old for espousing hard labor in this time of his bodily life; but was not drunkard, nor thief, nor swindler, nor any of these kind, but was always pious, affectionate to his numerous family consisting of the aforesaid five female women, and three males, the last of whom are still milking the parental mother. That your generous honor's lordship's servant was entreating to the Magistrate for employment in Municipality to remove filth, etc., but was not granted the petitioner. Therefore your generous lordship will give to me some easy work, in the —— Department, or something of this sort. For which act of kindness your noble lordship's poor servant will, as in duty bound, pray for your longevity. I have the honor to be, sir, your most obedient servant, ——, Candidate."

NEW YORK.

CROTON WATER. — Complaints came from various parts of the city that a curious and unusual taste exists in the drinking-water. The reason assigned for it is that in some manner the source of supply has become contaminated, and persons residing in the neighborhood of Croton Lake are said to be alarmed at the presence of miasmatic influences there. The water being extremely low, miles of mud flats are left exposed to the action of the sun, and decaying vegetable matter and dead mussels fill the air with a nauseating effluvia.

HYDROPHOBIA INOCULATIONS. — There are at present being treated at the Pasteur Institute in West Tenth Street, six new patients from Massachusetts. A man from South Framingham and three children from Ashland were all very severely bitten by the same dog, a large collie, which was finally killed by a brother of the children, with a base-ball club, and which Dr. Gibier believes was undoubtedly suffering from rabies.

Bequests to Institutions. — By the will of the late David Steward $5,000 is left to St. Luke's Hospital, to endow a bed in perpetuity; and by the will of the late Charles Wm. Merrill, $5,000 is left to the House of Rest for consumptives. Among the bequests of the late Hector C. Havemeyer are the following: $35,000 to the Manhattan Eye and Ear Hospital, $10,000 to the New York Eye and Ear Infirmary, and $5,000 each to the Presbyterian Hospital and the New York Post-Graduate Medical School and Hospital.

Miscellany.

TREATMENT OF CONSTIPATION IN CHILDREN BY ABDOMINAL MASSAGE.

Karnitzky [1] describes this method of treatment, in both acute and chronic constipation, in children from eight to eleven years of age.

He concludes that abdominal massage may produce effects upon the alimentary tract, in connection with digestion, which are not inferior to those produced by purgatives. Habitual constipation may be easily cured by massage without the aid of purgatives, and the more readily the younger the child. The younger a child is the milder should the manipulations be, and the shorter the *séances*, which should be from three to ten minutes according to the age of the patient. Longer *séances* are inadvisable, and may even be harmful and aggravate the condition of the patient. Abdominal massage may be regarded as the best means of treating constipation in children. Purgatives should only be used in exceptional cases.

CENTRIFUGAL FORCE IN CLINICAL DIAGNOSIS.

In the *Congress für Innere Medizin*, in Wiesbaden, Litten gave an account of a method which had been devised for the adaptation to clinical medicine of the uses of centrifugal force, which have hitherto been applied only by physiologists.[2] The usual methods of filtering, and of allowing fluids to settle, have often certain manifest disadvantages, and these are thus overcome. Special reference is made to examination of the urine, and the ease with which tube-casts, tubercle bacilli and other micro-organisms, blood-corpuscles, etc., may by this means be detected. It is applicable, also, to the investigation of fluid from echinococcus cysts and of pleural effusions.

The advantages with regard to the latter are thus stated: "Easier demonstration of tubercle bacilli. Constant demonstration of blood in clear pleuritic effusions. Avoidance of the coagulation of the exudation. The last is specially important; for, as is known, there are some pleuritic exudations which coagulate immediately, so that microscopic examination of them is impossible. If one warms the glass of the centrifugal machine, and allows the fluid to run into it, and sets it at once in motion, the corpuscular elements are obtained before coagulation occurs."

[1] Journal de Médicine, March 15th.
[2] Wiener klinische Wochenschrift, June 4th.

THE TREATMENT OF ACUTE ANGINA.

In the *Journal de Médicine* for April 10th,[1] Dr. Capart publishes the following methods of treatment which he employs in different forms of angina. In acute suppurative tonsillitis he causes the patient to suck small pieces of ice and orders twenty grains each of powdered salol and milk-sugar to be divided into six powders, three to be taken each day; or an equivalent amount of salol may be made into an emulsion with gum-arabic and given according to the same directions. In addition, he prescribes a gargle composed of fifteen grains of salicylic acid, seven and one-half grains of acetate of sodium in nine ounces of distilled water, flavored with a little syrup. As a prophylactic measure against the return of abscess in the tonsils, he advises the patients for at least a month to use a gargle of a weak solution of alum containing a few drops of carbolic acid, or the following gargle may be employed:

℞ Crystalized carbolic acid, ... ʒ i.
Absolute alcohol, ... ʒ v.
Essence of mint, ... m xvj.

Of this solution ten drops are added to half a tumblerful of water, and used as a gargle morning and evening.

In simple catarrhal angina he prescribes the following potion:

℞ Borax, ... ʒ i.
Salicylate of sodium, ... ʒ ss.
Decoction of marsh-mallow, . . . ʒ vi.

Flavor with syrup.

If a cure does not take place within twenty-four or thirty-six hours he then has recourse to a slightly astringent gargle, such as the following:

℞ Calcined Alum, ... gr. xl.
Alcohol, } . . . . . aa ʒ iiss.
Pure glycerin, }
Water, ... ʒ x.

To be used as a gargle four times daily.

He cautions in the strongest terms against the use of concentrated solutions of tannin or alum.

THE PREPARATION OF SPONGES FOR USE IN SURGERY.

Wayland, in the *Annals of Surgery*, Vol XIII, No. 5, considers the best methods of rendering sponges absolutely sterile.[2]

He finds that sponges of close texture, even if soaked in a solution of carbolic acid up to the strength of 1 to 40, are not rendered sterile throughout. The central portions of such sponges, if planted upon nutrient gelatin, show abundant growths of putrefactive microbes. Again, the ordinary surgical sponge, impregnated with foul discharges and thoroughly cleansed with a solution of carbolic acid, likewise exhibits, when implanted upon nutrient gelatin, abundant growths. If, however, a solution of 1 to 2000 bichloride of mercury is employed, such sponges remain entirely sterile. The small cut Turkey sponges are the best, because, though their texture is close, their shape prevents them from being anywhere so thick as to prevent the thorough penetration of the antiseptic solutions.

The question of the proper manner to store sponges is one of extreme importance. A number of sponges were kept for nine months, some in a solution of 1 to 20 carbolic, others in a solution of 1 to 500 bichloride.

[1] Therapeutic Gazette, June.
[2] American Journal of Medical Sciences, July.

Both sets were darkened; but neither suffered in consistence, and even by microscopical examination no changes in texture could be detected. The sponges will in time darken, not from being actually dirty, but from the process of pigmentation. It would seem, then, that after the sponges have been thoroughly cleansed, storing in 1 to 500 bichloride solution renders them absolutely sterile and does not impair their useful qualities.

The author has usually employed the hyposulphite process in preparing sponges; that is, the sponges are first steeped in a hydrochloric acid solution, 1 to 10, then immersed in a bath composed of hyposulphite of soda one part, hydrochloric acid two parts, water twelve parts. This solution is then pressed out, and the sponges are well washed in cold water. They are finally placed in a bath containing half an ounce of carbonate of potash.

Objection is raised to using the sponges more than once, since while it is quite possible to render a septic sponge aseptic, there is no means of knowing whether or not ptomaines or toxic albumoses may be present, and there is no known agent which can be relied on to counteract the possible toxic effect of such substances.

THERAPEUTIC NOTES.

STRYCHNINE IN DIPHTHERITIC PARALYSIS. — Rosenzweig[1] reports very good results from the hypodermic injection of strychnine in paralysis following diphtheria. He tried it in four cases, in doses of two to three milligrammes, with the effect of causing the nasal speech and difficulty of swallowing to disappear rapidly. This treatment was originally proposed by Hensch, and, the writer thinks, has not received the attention it deserves.

A LINIMENT FOR ECZEMA OF THE ANUS AND SCROTUM. — Unna recommends the following:[2]

℞ Olei Lini. }
Aquæ calcis } . . . . . ää ʒ j.
Zinci oxidi }
Iodoformi . . . . . ʒ iss. M.

STOMATITIS IN CHILDREN. — Where the trouble is extensive and painful the *Province Médicale* recommends the following treatment:

(1) The gums should be brushed with

℞ Cocaïne hydrochlor. . . . . gr. iss.
Sodii chloridi . . . . . gr. xv.
Glycerin }
Aquæ } . . . . . ää ʒ iiss. M.

Use a camel's hair brush.

(2) A spray of a solution of boracic acid should be frequently used.

(3) Bromide of potash internally.

TREATMENT OF ERYSIPELAS.[3] — Dr. Ch. Ulrich reports the results given by three modes of treatment adopted in a series of eighty-nine cases of facial erysipelas, namely, ice compresses, tar preparation and ichthyol collodion. He found that, having respect to the spread of the rash, the formation of bullæ, recrudescence, and the duration of the disease, the third proved the most effective means of treatment. He insists on the importance of applying the collodion in a broad band, beyond the edge of the rash. The collodion consists of

℞ Ammonii sulpho-ichthyolat. }
Ætheris } . . . ää ʒ ss.
Collodii flex. . . . . ʒ j. M.

HYDROCHLORATE OF OREXIN. — Gordon[4] gives his results in a paper on this drug. The full chemical name is hydrochlorate of phenyl-dihydro-quino-azoline. It was introduced by Professor Penzoldt of Erlangen some time ago as a pure stomachic, for which he claimed that it increased the appetite, aided digestion, and stimulated absorption of the products of digestion. It occurs in colorless crystals, which are to a certain extent soluble in water. The taste is sharp, pungent, and somewhat acrid, giving a slightly burning sensation to the tongue. The drug may be given either well diluted in water or made into pill form with any of the ordinary excipients, and can also be given between thin slices of bread and butter or in the form of wafers. The adult dose was stated by Penzoldt to be from three to five grains. The dose given by the author is one-quarter of a grain three times a day, before food. After a summary of cases, both adults and children, the author says that it would appear that orexin is, in the loss of appetite concurrent with tubercular disease, a valuable stimulant. The power of stimulating absorption of the products of digestion claimed for it seems to be merited, for under its use, as a rule, the tongue became less furred, and the constipation was relieved. Though, so far, these observations cover only a limited field, still the indications are that orexin is worthy of receiving an unbiased trial in suitable cases.

[1] Therapeutische Monatshefte, No. 4, 1891.
[2] L'Union Médicale, July 2d.
[3] Edinburgh Medical Journal, July.
[4] Lancet, July 11.

Correspondence.

DR. ANDREW D. WHITE'S WARFARE OF SCIENCE.

NAHANT, MASS., July 24, 1891.

MR. EDITOR: At first I was somewhat annoyed that you should have honored Dr. Andrew D. White's statements on the relation of religion to medicine from his papers in the *Popular Science Monthly*, by embodying them in an editorial in your number of July 16th. It is, however, for the best. It gives me the opportunity of exposing a series of gross misrepresentations and of absolutely false statements which may deceive many. The questions which particularly concern me are those connected with the relation of the Catholic Church to medicine, especially in the Middle Ages and at the Renaissance. It is necessary for me to show that Dr. White is so absolutely untrustworthy that no statement of his can be accepted without proof. The whole spirit of his article is bitterly prejudiced and unjust. He seeks continually to give the impression that the Church has oppressed medicine. Let us now take up several points one by one.

By a slight alteration, which I am sure was unintentional, you have made one of his statements much worse than it was originally. You say, "The School of Salerno was held in aversion by strict churchmen." Dr. White said, "by multitudes of strict churchmen." . . . This was unlikely, but not impossible. The school was founded by the Benedictines, who certainly were considered strict churchmen. A little later you say, following, I believe, Dr. White quite accurately: "Pope Innocent III, early in the 13th century, forbade physicians, under pain of excommunication, to undertake medical treatment without calling in ecclesiastical advice." In point of fact, what is referred to was not done by Innocent III, but by the Fourth Council of the Lateran, during his reign. That, however, is a

detail of little consequence. The point is, first, the entirely false impression that is given, and, secondly, the penalty. What was decreed was, that a physician, on being called to a case, should advise the patient to attend to the state of his conscience, that is, to send for a confessor; but this in no way implied that the priest was to interfere with the treatment of the case. The penalty for not doing this was not excommunication, but prohibition to enter a church, which was a very different thing from excommunication in those days. There is another part of the same canon which Dr. White does not quote, but which is worthy of mention. It was that the physician should advise no remedy for the good of the body that might be to the injury of the soul. The penalty in this case was excommunication. This, indeed, is a check on medicine, but a most salutary one. The talk of Vesalius having been driven to exile and death is absurd. So far from having been oppressed by the Church, he flourished chiefly in Italy and Spain, the two countries in Europe where she was strongest. He professed anatomy at Padua, Bologna and Pisa, apparently going from one to the other. He later went to Spain. He no doubt met with great opposition, but probably chiefly from his own profession. He remained at the Court in Spain for nineteen or twenty years and then set out on a pilgrimage to the Holy Land, returning from which he suffered shipwreck and death at the Island of Zante. There are a variety of rumors as to the cause of this pilgrimage, which I myself investigated some years ago. There are sensational stories of his having by mistake cut into a living man; and, of course, from certain sources there are hints at the suspicion of heresy and the Inquisition. It seems to be all surmise. I could find nothing pointing to clerical oppression. Then again, it was said that he went to escape professional jealousy or to make money or to get rid of his wife. For my part, knowing nothing about it, I incline to believe that he went like many others, because he wanted to. Be that as it may, it is certain that at Jerusalem he received letters from the Senate of Venice offering him the professorship of anatomy at Padua, which disposes effectually of Dr. White's statements about his being driven to exile and death.

I must now dispose of a glaring misstatement of Dr. White's which you do not reproduce. I do so partly from the interest there is in the subject, partly as showing this writer's absolute untrustworthiness.

Dr. White says, "Pope Boniface VIII interdicted dissection as sacrilege, threatening excommunication against those who practised it."[1] This is utterly false. What makes it worse is, that the nature of the decree of Boniface VIII is set forth in its title, which is as follows: "*Corpora defunctorum exenterantes et ea immaniter decoquentes, ut ossa a carnibus separata ferant sepelienda in terram suam, ipso facto sunt excommunicati.*" That is to say, it forbids the eviscerating and boiling the bodies of the dead for the purpose of bringing the bones home to the country of the departed. This is a custom which appears to have sprung up, or at least been in use, during the Crusades. Neither in this decree nor anywhere else, so far as I have been able to learn, is there any prohibition of dissection.

Now, as to Dr. White's second conclusion, "that in proportion as the grasp of theology upon education tightened, medicine declined, and in proportion as that grasp has relaxed, medicine has developed," I have something to say. The schools of Salerno, Padua, Bologna, Rome, Naples, Pavia and Pisa, show that the country where medicine, and above all, where anatomy flourished was just where the grasp of theology was strong. Further, though very probably in some cases abused by individuals, the influence of theology on medicine has been for morality. One instance has been already mentioned; another is the protection of the unborn. I can well believe that where all theological restraint is thrown away, experiments may be tried by which science will prosper at the cost of patients. Reports of such — let us hope unfounded ones — have recently come from Berlin. Yours truly,

THOMAS DWIGHT, M.D.

[1] Popular Science Monthly, June, 1891, p. 155.

PROLAPSE OF THE SIGMOID FLEXURE INTO THE RECTUM.

BOSTON, July 24, 1891.

MR. EDITOR: — It is not easy to do full justice to a lecture like that of Dr. T. Lauder Brunton, on "Elimination and its Uses in Preventing and Curing Disease," in the limits of your editorial abstract of July 16th. For those who cannot read the whole lecture for themselves, I think it is a pity that the most novel, interesting and practical procedure in the treatment of prolapse of the sigmoid flexure into the rectum should have been omitted from your editorial. Allow me to give you Dr. Brunton's own words:

"I once saw a case of this sort at intervals for two or three years without suspecting its nature. It occurred in a man from New Zealand, who had been accustomed to a great deal of horseback exercise, frequently riding forty miles a day. He began to suffer from neurasthenia, hypochondriasis, loss of appetite, failing strength and emaciation. In fact, he presented almost the typical aspect of the hysterical girls who are so well treated by the Weir Mitchell plan, and in consequence of this I advised him to undergo a course of massage. This he did two or three times with very little good, until, by my advice, he went to Dr. Eccles, who discovered the real cause of his illness, and *by the judicious application of massage to the intestines completely restored him to health.*"

The method is not described, but it probably was a sort of abdominal taxis, so applied as to pull the sigmoid flexure up out of the rectum, concerning which Dr. Humphrey, in the *Lancet* (Vol. I, 1890, page 76), says: "The merit of the early use of anæsthesia and abdominal taxis is, that, while eminently adapted to many, it is hardly likely to be prejudicial to any." Yours truly,

DOUGLAS GRAHAM, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 18, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	1·74	666	66.60	7.65	30.42	.54	3.53
Chicago	1,099,850	583	336	40.00	5.64	22.91	10.26	1.54
Philadelphia	1,046,964	499	280	33.60	7.80	28.80	1.40	1.98
Brooklyn	806,343	584	366	37.76	7.99	32.98	.85	2.72
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	297	108	25.92	8.16	24.48	.48	.96
Baltimore	434,439	239	126	37.38	5.88	31.50	.84	1.26
Cincinnati	296,908	124	51	24.30	7.29	13.77	1.62	6.48
Cleveland	262,000	—	—	—	—	—	—	—
Pittsburg	240,000	—	—	—	—	—	—	—
Milwaukee	240,000	93	55	27.00	7.56	16.20	1.08	5.40
Washington	230,392	124	57	30.78	11.34	23.49	—	3.24
Nashville	76,168	31	18	25.84	6.46	12.92	6.46	—
Charleston	65,165	40	19	22.50	5.00	17.50	2.50	—
Portland	36,425	11	1	9.09	—	9.09	—	—
Worcester	84,655	38	16	39.45	—	34.19	—	—
Lowell	77,696	54	36	48.10	9.25	44.40	—	1.85
Fall River	74,398	53	—	45.12	7.52	47.00	—	—
Cambridge	70,028	39	20	38.40	5.12	30.72	—	2.56
Lynn	55,727	15	3	6.66	6.66	6.66	—	—
Lawrence	44,654	24	13	41.60	—	37.44	—	—
Springfield	44,179	22	12	45.50	13.65	36.40	—	—
New Bedford	40,733	18	10	16.66	—	11.11	—	—
Salem	30,801	9	4	11.11	11.11	11.11	—	—
Chelsea	27,909	14	6	14.28	7.14	7.14	—	—
Haverhill	27,412	20	13	35.00	—	25.00	5.00	—
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,845	7	3	42.84	14.28	42.84	—	—
Gloucester	24,651	7	4	28.56	—	—	—	—
Newton	24,379	12	7	41.66	8.33	33.33	—	8.33
Malden	23,031	6	1	16.66	16.66	—	—	16.66
Fitchburg	22,037	10	3	10.00	—	—	—	10.00
Waltham	18,707	5	2	20.00	40.00	20.00	—	—
Pittsfield	17,281	3	3	33.33	33.33	—	—	—
Quincy	16,723	6	4	16.66	16.66	16.66	—	—
Newburyport	13,947	5	2	40.00	—	40.00	—	—
Medford	11,079	5	1	20.00	20.00	—	20.00	—
Clinton	10,424	—	—	—	—	—	—	—
Hyde Park	10,193	4	2	—	—	—	—	—
Peabody	10,158	8	3	—	12.50	—	—	—

Deaths reported 3,883: under five years of age 2,251; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,455, consumption 294, acute lung diseases 225, diarrhœal diseases 1120, diphtheria and croup 96, typhoid fever 90, scarlet fever 54, measles 36, cerebro-spinal meningitis 25, whooping-cough 22, malarial fever 9, erysipelas 3.

From scarlet fever New York 30, Brooklyn 8, Chicago 6, Baltimore and Cincinnati 3 each, Philadelphia 2, Milwaukee and Springfield 1 each. From measles New York 12, Chicago 11, Philadelphia 3, Brooklyn and Cambridge 2 each, Milwaukee, Charleston, Worcester, Lawrence, Springfield and Chelsea 1 each. From cerebro-spinal meningitis Chicago 7, New York 6, Brooklyn and Washington 3 each, Baltimore and Gloucester 2 each, Worcester and Haverhill 1 each. From whooping-cough Chicago 7, New York 5, Philadelphia, Milwaukee and Washington 2 each, Baltimore, Nashville, Fall River and New Bedford 1 each. From malarial fever New York 5, Philadelphia 3, Nashville 1. From erysipelas New York, Brooklyn and Baltimore 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending July 11th, the death-rate was 16.8. Deaths reported 3,029: whooping-cough 98, diarrhœa 78, measles 66, diphtheria 28, scarlet fever 22, fever 17, small-pox (London) 1.

The death-rates ranged from 12.4 in Norwich to 21.7 in Preston, Birmingham 16.0, Bradford 15.4, Cardiff 20.4, Hull 15.6, Leeds 16.5, Leicester 16.1, Liverpool 20.4, London 16.7, Manchester 19.4, Sheffield 12.8, Sunderland 19.9.

In Edinburgh 16.7, Glasgow 21.6, Dublin 18.8.

METEOROLOGICAL RECORD,

For the week ending July 18, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...12	30.13	66	74	58	82	88	86	N.W.	S.W.	3	13	O.	C.	
M..13	30.10	72	77	68	69	61	65	W.	S.W.	10	12	C.	C.	
T..14	30.00	79	88	69	69	68	75	S.W.	S.W.	16	12	C.	O.	†
W.15	29.90	77	84	70	70	80	81	S.W.	S.	16	14	O.	O.	†
T..16	29.95	77	84	71	71	78	67	W.	W.	10	10	O.	F.	
F..17	30.07	72	81	62	62	51	57	W.	S.W.	6	12	O.	C.	
S..18	30.00	70	76	64	64	56	76	S.W.	S.E.	6	12	O.	R.	.05

* O., cloudy: C., clear: F., fair: G., fog: H., hazy S., smoky: R., rain: T., threatening: N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 18, 1891, TO JULY 24, 1891.

Assistant Surgeon WILLIAM L. KNEEDLER, U. S. Army, granted leave of absence for one month.

Surgeon HENRY R. TILTON, U. S. Army, granted leave of absence for two months, on surgeon's certificate of disability.

Captain REUBEN L. ROBERTSON, assistant surgeon, U. S. Army, ordered for duty to Fort Niagara, N. Y., on the abandonment of Fort Abraham Lincoln, North Dakota.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING JULY 25, 1891.

JAMES G FIELD, assistant surgeon, ordered to special duty in the Bureau of Medicine and Surgery.

JAMES S. HOPE, assistant surgeon, ordered to the Receiving-ship "Franklin."

LEWIS MORRIS, assistant surgeon, ordered to the "Ajax" and other Monitors, Richmond, Va.

JAMES F. KEENEY, assistant surgeon, promoted to passed assistant surgeon.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING JULY 18, 1891.

MURRAY, R. D., surgeon. To proceed to Gulf Quarantine for temporary duty. July 1, 1891.

SAWTELLE, H. W., surgeon. Relieved from duty at Portland, Me., ordered to Boston, Mass. July 11, 1891.

IRWIN, FAIRFAX, surgeon. When relieved at Boston, Mass., to proceed to Buffalo, N. Y., for temporary duty. July 11, 1891.

CARTER, H. R., passed assistant surgeon. Ordered to Washington, D. C., for temporary duty. July 2, 1891.

BECKHAM, C. T., passed assistant surgeon. Granted leave of absence for seven days. June 30, 1891.

DEVAN, S. C., passed assistant surgeon. When relieved at Buffalo, N. Y., to proceed to Portland, Me., for duty. July 11, 1891.

BROOKS, S. D, passed assistant surgeon. Granted leave of absence for thirty days. July 13, 1891.

KINYOUN, J. J., passed assistant surgeon. Granted leave of absence for thirty days. July 14, 1891.

HOUGHTON, E. A., assistant surgeon. To proceed to Cleveland, O., for temporary duty. July 8, 1891.

DEATH.

J. F. GROENEVELT, assistant surgeon, died of yellow fever, at the Gulf Quarantine Station, June 29, 1891.

SOCIETY NOTICE.

AMERICAN ELECTRO-THERAPEUTIC ASSOCIATION. — This Association will hold its first annual meeting at the Hall of the College of Physicians, corner Locust and Thirteenth Streets, Philadelphia, Pa., Thursday, Friday and Saturday, September 24–26, 1891, under the Presidency of Dr. G. Betton Massey.

Physicians interested in the discussion of Electricity in Medicine are invited to attend without further notice.

WM. H. WALLING, M.D., *Secretary*.
2005 Arch St., Philadelphia.

APPOINTMENTS.

Henry Jackson, M.D., has been appointed Physician to Medical Out-Patients at the Boston City Hospital.

J. W. Babcock, M.D., Assistant Physician at the McLean Asylum, Somerville, has been appointed Superintendent of the State Asylum at Columbia, S. C.

DEATHS.

OVID P. WELLS, M.D., died in New York, July 22d, aged eighty-six. In the epidemic of 1849 he was placed in charge of the cholera hospital, and before the establishment of the New York Board of Health he held the position of City Physician. He was one of the founders of the New York Academy of Medicine.

CHARLES R. GILL, M.D., formerly of New York, died, July 12th, aged seventy. Dr. Gill had been suffering from cancer of the larynx, making it necessary to wear a tracheotomy tube, which became stopped while he was on a steamboat, causing strangulation before assistance could be obtained.

EDWARD SUTTON SMITH, M.D., died suddenly, July 21st, aged sixty-one. He graduated from Harvard College in the Class of 1853, and from the Medical School in 1856. He had spent several years abroad, and at one time practised in New York.

HERMAN B. SMITH, M.D., of Westville, Conn., died, July 16th. He graduated from the Medical Department of Yale University in 1876.

ALBERT SKINNER, M.D., of Youngstown, N. Y., the oldest practitioner in Niagara County, died, July 18th, aged eighty-four.

W. WEISS, Professor of Surgical Pathology at the Bohemian University of Prague, died, about July 10th, aged fifty-six.

CHARLES E. SHEPPARD, M.D., F.R.C.S., died in London, June 30th, aged thirty-five. He was well-known as an anæsthetist, in which capacity he was connected with several London hospitals. His death was peculiarly sad, being due to mental depression the night after a patient, to whom he was administering chloroform, died from the effects of the drug.

WILLIAM HENRY STONE, M.D., F.R.C.P., F.R.C.S., Physician to St. Thomas Hospital, Croonian, Lumleian and Harveian Lecturer, etc., died in London, July 5th, aged sixty-one.

BOOKS AND PAMPHLETS RECEIVED.

Massachusetts College of Pharmacy, Twenty-fifth Annual Catalogue, 1891–92.

The Nervous Features and Sequences of La Grippe. By Archibald Church, M.D., Chicago. 1891.

Woman's Medical College of the New York Infirmary, Twenty-sixth Year Annual Catalogue and Announcement, June, 1891.

Lecture.

NEURASTHENIA AND ITS MENTAL SYMPTOMS.[1]

THE SHATTUCK LECTURE FOR 1891.

BY EDWARD COWLES, M.D., SOMERVILLE.

(Continued from No. 5, page 100.)

Sense of Ill-being. — But in the conditions, represented by a sense of ill-being, there are feelings of fatigue, depression, anxiety, languor, absence of desires, a sense of lack of power, of self-depreciation, and of personal unworthiness, etc., of which the patient gives account. Beard has well characterized this "as an instinctive consciousness of inadequacy for the task set before us." "We are hopeless," he says, "because our nerve force is so reduced"; — "a certain amount of nerve strength is necessary to supply the courage requisite for simple existence." The persistency of these feelings is marked by a visible change of personality. In slighter degrees these changes are like those commonly seen in the evening tire of an active man, from which restoration follows. When, however, in the processes of waste and repair, the balance turns slowly and insidiously to the side of weakness of nervous tissues, whose corresponding mental activities show these symptoms of disability, they stand as evidences of neurasthenic condition. As these morbid physical states persist, the ideas suggested by the morbid feelings, and to account for them, are framed by degrees into some wrong conception. Although there are, however, many cases of melancholia without delusions, yet beliefs may be engendered consistent with the morbid state of hopelessness, self-reproach, and worry. In many cases, special delusions are formed for which the patient gives reasons, with a degree of intellectual integrity that is peculiar to melancholia. These allied organic and consequent mental changes profoundly modify the personality in its inmost nature. By the process described this is not the violent and superficial effect of sudden emotions, but results from a slow and subtle process that irresistibly changes the basis of the personality. It is easy to see how such morbid organic sensations may be engendered in a general neurasthenia and produce such a train of nervous symptoms, characterized by a sense of ill-being, depression and hopelessness. Like results may come from nervous exhaustion initiated in the brain itself, by mental overwork, care and anxiety. Here is the bond between well-being and ill-being of body and the emotional tone. It is plain how the changing states of mental feeling reflect the bodily states in the alterations of the sense of personality.

Mental Symptoms of Auto-intoxication. — The new evidence in regard to the toxic elements engendered in the body sustains these views, and seems to offer the long sought explanation of many obscure conditions. Full force should be given to the fact that in all forms of functional activity the fatigue proper, from the discharge of energy and the breaking down of material cell contents, has always joined with it the toxic influence of self-produced waste products. We are able to account for much that appears confusing in the symptoms of fatigue, by ascribing their variations to differences in the kind and quantity of the specific poisons that are developed in the various tissues. For example, while melancholia is generally characterized by a disposition to quietude and shrinking into seclusion, some cases are marked by great mental agitation and physical restlessness, the essential physical and mental condition being the same. A fair inference is that there is an irritating intoxication in such cases. But again there is the peculiar condition of apparent stupor added to the ordinary melancholia, so that in extreme cases the patient cannot move his limbs or utter a word, and the facial expression is blank. This presents a more profound degree of the condition described by Brunton as like the poisoning by curare of the muscular mechanism. The absence of true psychic stupor in many such cases is well proven. It has been seen that these symptoms may be produced by choline, neurine and muscarine, which are antagonistic to atropine. In Hare's suggestion that it is possible to give relief by antagonistic remedies when there are signs of auto-poisoning, he mentions dilated pupils, a hot and dry skin, dim eyesight, rapid pulse, as like the effects of atropine. Symptoms resembling them in lesser degree are seen in both neurasthenia and melancholia. Again a slow and full pulse with high arterial tension, and a throbbing frontal headache, suggests the ptomaine like digitalin. Some of these poisonous substances lower the temperature; it is often sub-normal in the graver neurasthenic conditions. Upon the basis of such causes, and such a method of production, the "excessive irritability and weakness" of neurasthenia seem amply accounted for. By means of local perversions, the weaker organic sensations sometimes come to be felt, and may be so intensified as to bring them into the group of those that are consciously perceived and localized. Languor, dulness, stupor and lethargy are like manifestations of toxic influences. These altered sensations will be hereafter described. They are of great psychological importance. Reference has already been made to the relation of uric acid to diseases of the nervous system, and the characteristic symptoms of lassitude, depression of spirits, etc. Its formation, elimination, and possible excess in the blood, are so essentially connected with the processes of waste and repair as to make these symptoms most significant in their relation to neurasthenia.

The conditions of mental feeling, marked by the emotional tone, as states of well- or ill-being, have now been shown to be intimately bound up with the great volume of subconscious bodily feelings, and representative of their predominating quality. They are normally so low in intensity as to be undiscriminated; but when intensified by morbid conditions they become symptoms of the existing disorder.

(2) *Sensations from the Special Senses; — Perceptions, Ideas, etc., and Disorders of Intellect and Will.* — It now remains to consider the other group of symptoms representing disorders of the intellect and volition as distinguished from mental or physical feeling. Of these disorders the most important indications pertain to the attention. All writers on neurasthenia have noted the fact that the mental symptoms of the higher order are always prominent. But what is wanted is a sufficient analysis of them to show their two-fold significance. A brief explanation should make this clear, and easy to understand, as it is necessary to be known. On the one hand the disorder may begin below in the sources of organic sensations, and extend

[1] Delivered before the Massachusetts Medical Society, June 9, 1891.

upward into the higher mental sphere. The great mass of sensations beneath are summed up into our sense of physical personality. Compared with them, all that comes, into our conscious minds through the special senses, and the succeeding perceptions, ideas, memories, judgments, feelings and volitions, in the "circuit of consciousness," represents a small item. In acute neurasthenia, and true melancholia and mania, there is always nutritional, toxic and functional weakness, fundamentally, in the organism; it is from this that the influences arise which effect our conscious feeling and thinking, making these higher mental states the sensitive indices of the lower physical changes. For like reasons these subconscious changes of personality, pervading and voluminous, have a predominating influence. When all goes well with the organism, and it is in a condition of unfelt equilibrium, the processes of thinking and feeling are adjusted, more or less logically, to the varying environment, upon a basis of a sense of well-being and normal love of life. On the other hand, a morbid process may be started in these higher activities, in a previously healthy and strong organism; but until the organism itself suffers a change to the specified nutritional and functional weakness, there can be no such mental symptoms as are being studied here. Normal mental activities cannot produce "mental symptoms" except by first causing the characteristic "weakness" somewhere in the physical basis of them all.

Familiar Facts of Mental Manifestations. Consciousness.— There is no need, in this matter, of entering into psychological speculation. It is only necessary to consider the final facts of the manifestations of mind with which we are most familiar. We commonly note the fact of consciousness for example, and distinguish between such states as its absence in coma, its partial presence in sleep, or its full activity in an alert and intelligent mind when we cannot doubt that some activity of organic elements is added which was not present in the less active states, — as of coma, for example. We use many phrases to describe different degrees of this activity, meaning always a state of consciousness the sum total of all its activities.

The Attention. — The attention is the term applied to denote the mental action when a particuliar object of thought is held in mind to the exclusion of others. Active consciousness is always attending to some one presentation in its field, — this action is attention, and this activity is always going on in connection with every other mental action, or object of thought. The mind may attend to the presented perception of a new sensation, — a re-presentation in memory, — an abstract conception, — or the idea of a muscular movement. The larger importance of the attention is due to the fact that in it resides the inhibitory power over all mental operations. The attention is to these what the physiological principle of inhibition is to the lower nervous mechanisms. It is the abatement of this higher inhibitory power, and of its regulating and guiding control, that appears early and most constantly in mental fatigue and weakness. This is manifested by changes in the power of attention.

Ribot[46] has made very clear, by a simple analysis, the office of the attention. It acts in two forms: — voluntary attention is its acquired form gained as a result of the higher evolution of man; — spontaneous attention is its natural or primary form, when its action is attracted or reflex, as is so manifest in children and animals.

Spontaneous Attention. — Spontaneous attention being first considered, the essential fact is that it is always attracted to the object or idea in the mind that most interests it. or keeps it on the alert. This idea may be intensified in interest by pleasurable or painful feeling, — by a desire or a fear. Now it has been shown that when the emotional tone represents physical well-being or ill-being, ideas harmonious with the emotional tone will be intensified. It has been shown also that in states of ill-being and depression the attention is persistently attracted by painful ideas which are thereby further intensified. Thus a state of habitual mental pain shows attention attracted by, and dwelling upon, painful ideas. This is the basis of worry, and it is thus shown how worry intensifies its own cause. The clinical significance of worry, therefore, is that the weakened attention is being occupied by painful ideas which are intensified by the exaggerated influence of a painful emotional tone representing a weakened and irritated physical basis. The painful ideas are further intensified by the concentration upon them of the attracted attention. When only attracted attention is in action, as in extreme conditions, the spontaneous flow of ideas goes through the mind in a wandering train, as in dreaming or delirium, without check or guidance; and those ideas in the train most attract the attention which are then in harmony with the emotional tone.

Voluntary Attention. — The exact antithesis of this is voluntary attention. As to this, the essential fact is, that it is the activity of inhibition. The attention directed and concentrated upon a chosen object of thought is an act of volition. A man controls his own mind by willing his attention, as it were, to be fixed upon some one item or object, in the train of presented ideas, to the exclusion of others. He thinks about what he chooses to think about; he may make the most worthy object the most interesting; by dwelling upon its worthiness he intensifies it, thus resisting the attraction of less worthy interests and emotions. This directing of the attention by the will may control and guide the processes of thinking, — may inhibit the promptings of the emotions in conduct; and it does manifest itself in all voluntary action. Attention has always a motor element and expresses itself in muscular movement. In a healthy man, with a refreshed and vigorous organism, and a trained intelligence and attention, is found the most efficient expression of this higher power of inhibitory and guiding control. This is an acquired power, improved by training. Now it is plain to see the importance of the clinical signs in regard to the higher inhibition. Let there be weakening of nervous energy from any cause, then the weakening of the voluntary attention is a direct and immediate sign of mental and general tire or exhaustion. It may be that, in such a state, as much or more "control" is exercised, but it requires more effort and expenditure of nervous energy.

The more higher control power is lessened, the more the spontaneous attention is left free to act. The gradual reduction of the control power of the voluntary attention is matter of common clinical observation in normal fatigue, neurasthenia, melancholia, etc. Here then is further shown the bond that extends between the changes in the physical basis of the personality and the changes in the higher power of

[46] The Psychology of the Attention, trans., Chicago, 1890.

attention which thus becomes a sensitive index of bodily conditions. The mental attitude at any given moment is determined by the state of the attention. This is always tending to act in a reflex and spontaneous manner according to the emotional tone, as attracted by the most interesting ideas. When bodily feeling is in equilibrium the voluntary direction of the attention is easiest; but direction is always inhibition, — by will and choice the ideas are held in view that stir the worthiest feelings, or a consenting will yields to those made interesting by desire. Then feelings as motives add intensification to the mental attitude, and again we find the potent influence of the emotional tone. It controls or is controlled. This brings out the practical point that is of present interest, — the need of the higher inhibitory control and what it works against. According to Foster, just as physiological inhibition plays its part in the lower mechanisms, so is it important in the whole work of the central nervous system. He says,[47] "In all probability many of the phenomena of nervous life are the outcome of a contest between what we call inhibitory, and exciting or augmenting forces."

Another practical point is of the greatest importance here in regard to the higher inhibitory control, acting through voluntary attention. It is the application of the principles in the laws of practice, habit, and association. The mental activities do not escape the full force of these laws. When once a mental attitude has been determined by the inter-play of ideas, feelings, and controlling or consenting will, there is a functional disposition to repeat the organic and attendant psychical processes. "Habits of thought" are acquired, and they are characterized either by a habit of yielding to impulsive emotion, or as determined by a controlling inhibition. The principle of practice is in like manner always ready to reinforce the power of voluntary attention. Hence we see that the attention, as the agent of the will, has to work against also the effects of practice and habit which tend to become fixed by states of feeling, the associations of which with ideas are also strengthened by habit; while at the same time, voluntary attention trained by practice leads to the highest acquirements of mental power. Conversely, we see the import of the lessening of inhibitory, selecting, and directing power in states of nervous fatigue and exhaustion. Whatever the physician may discover in the bodily condition of his neurasthenic patient, or whatever he may infer of its pathology, he should always remember the effects of habit in the mental activities. The nervous invalid may remain such, even under strongly recuperative tendencies, simply from mental habit, confirming it both by misuse and disuse of normal power. The patient, powerless to contend alone against the forces of weakness and habit, must have a physician for both mind and body.

Mental Symptoms in Normal Fatigue. — The fatigue of the attention will vary in its manifestations in different degrees of nervous fatigue and exhaustion. Its predominating significance is also shown by its relation to mental symptoms which may be sufficiently illustrated by a not uncommon experience. Suppose that after a day's professional labor you have spent a long evening at your desk. Your probable mental condition may then be as follows: — There is lessened mental activity. Voluntary attention is fatigued, and in spite of much effort you repeatedly find your spontaneous attention attracted along some train of ideas to a subject remote from the one you are trying to keep in mind. Sense-perception is less acute, — the attention shows fatigue by inattention to incoming sensations. There is less power of memory, — it is less retentive, because diminished attention to impressions renders them less vivid, — its recalling power is slower and weaker, — and in the underlying association of ideas there is a spontaneous flow which is controlled only by unusual effort of will, — the association process is itself slower, the vocabulary diminishes, and even familiar names and words may not be recalled. The logical processes work more slowly in making comparisons and judgments, and in reasoning to conclusions, — the tired attention with effort holds on to one member of a proposition while another slips away. With growing torpor your attention may cease to be stimulated and you may fall asleep. There is a lowering of the emotional tone and a quietude of feeling with lessening of natural vivacity; there is a diminished sense of adequacy of power, and tasks seem difficult that after rest will appear easy enough. An abatement of power to control the motor mechanism is apparent as requiring more effort of attention. This is normal fatigue; it will be seen that in every phase of these activities the attention shows the effects of fatigue in lessened control. Restoration follows when in the repose of rest and sleep, the circulation removes the acid waste products, etc., that caused the somnolence, while it supplies the materials for rebuilding the cell-contents so that they may again yield energy upon being stimulated.

Mental Symptoms in the Genesis of Pathological Fatigue. — When the process of restoration is continuously incomplete, and after a time a similar degree of exhaustion is persistently established, the symptoms may not be quite the same in respect to the toxic influences. It is plain that there will have been going on an active process of removing them, though incompletely; and we have to conceive of a partial inanition and an irritating intoxication as contribution to the "excessive irritability" when it exists, as it commonly does, in neurasthenia. Then the normal fatigue has passed over into pathological fatigue. Recurring now, for example, to the picture of evening fatigue, after a day of hard work both physical and mental, a significant sequel might follow it. Suppose then you are suddenly called to a patient, whose life is in danger. You are aroused. For many hours you may anxiously work over the case with no apparent lack of energy or failure of the resources of your experience and skill. But when relief comes, and you try to get rest in sleep, you only lie awake, restless, your mind excitedly reviewing the scenes you have passed through, your will powerless to inhibit the train of ideas, and you have a painful sense of nervous tension and irritability.

There would seem to be in this condition a ready explanation of acute exhaustion, or excessive fatigue and toxicity. This is the initial stage of pathological fatigue. Such an incident is instructive in many ways. It shows how the store of nervous energy is held in reserve, within the limits of normal fatigue under ordinary stimulation. But unwonted interest being aroused and attention stimulated, the mechanism responds with an increase of cerebral circulation, and large cortical areas are probably excited to action.

[47] Op. cit., p. 918.

While more nutrition is thus taken up, more energy is given out; and although there is a more rapid removal of waste products it is not complete, and these gradually accumulate until some degree of exhaustion is manifested. Then in the search for the power of control over mental processes, the attention failing in its office becomes conspicuous by its absence or lessened power.

The mental mechanism is commonly stimulated to action by the external circumstance, as in the incident just related. The interest excited by the event arouses the attention which, acting in both its reflex and voluntary forms, intensifies all the mental activities. A like experience is still more common, in which there is absence of immediate objective interest, and the mental action proceeds more subjectively and from volition. Take another instance of evening fatigue, and suppose, for example, you have been delaying the writing of a medical paper which must be read to-morrow. With fatigue equal to that yielded to many times before, you approach the task to which a mixed interest is now added by your reflection upon the need of preparation and the consequences of failure to acquit yourself properly. With much effort of will and attention, you apply yourself to the beginning of the mental work. Presently the sense of fatigue and effort has passed away, — the subject itself gathers interest, — and you have a sense of satisfaction in the exercise of mental power. You may desist at last, not with consciousness of mental fatigue, but because the lateness of the hour claims your attention. But as before you may lie awake with an over-stimulated brain and weakened inhibition; and this condition may represent simply a less degree of over-fatigue than in the former instance.

In the first of these two cases, external circumstance furnished the immediate stimulating interest; — in the latter case it is memory and expectation, but the attention is more clearly voluntary and the whole process subjective. In both cases the rôle of the attention is apparent. It becomes evident also that the feeling of fatigue does not measure it, but only represents the fact of fatigue within normal limits, beyond which there is a reserve of nervous energy that may be drawn upon by stimulating the nervous mechanism through an extra effort of voluntary attention. The explanation of the attendant physiological processes throws light upon the whole matter. Ribot[48] says it is highly probable and almost universally admitted, that attention, even when not directed toward any region of the body, is accompanied by local hyperæmia of certain parts of the brain. This result of the greater functional activity is caused by a dilatation of the arteries, which itself is caused by the action of the vaso-motor nerves upon the muscular integuments of the arteries. But the vaso-motor branches of the great sympathetic are independent of the action of the will, and are not influenced directly by voluntary attention; they are, however, subjected to all the influences of the emotions. It is shown by the experiments of Mosso and others that the slightest and most transient emotion causes an afflux of blood to the brain. Maudsley[49] says, "We may fairly conclude that the effect of attention to a current of thought is to quicken the circulation in the nervous sub-strata which minister to it; not otherwise than as when some earnest thought has taken hold of the mind, it keeps up an active circulation in the brain, and will not let us go to sleep."

These considerations enable us to distinguish the main elements of the mechanism that were involved in the last two cases of evening fatigue. In both, interest and emotion were the immediate excitants of the increased blood-supply and brain activity; — in one, the emotion attended the thought of the external circumstance of a patient in danger, and attention was largely spontaneous, — in the other, the emotion accompanied the thought voluntarily chosen to be held in attention, although its interest was more remote. So the attention once becoming active, in whichever form, the same results then followed in either case, and the order was as follows: — attention, intensified ideas with mental feeling of interest or emotion, vaso-motor dilatation, quickened circulation and nutrition, increased expenditure of energy and waste products, and over-fatigue to the degree of exhaustion and irritability.

These phenomena of our commonest experience therefore bear this plain interpretation. It is fundamental in our nature, in the earlier stages of development as in children and animals, that our inner physiological activities and their expression in conduct are largely subject to the feelings, — our mechanisms are driven by untutored interests, emotions or blind instincts. But in the later development of the acquired forces of intellect and will, we control, select, and direct, through attention, the chosen, impelling interests, combined with much yielding and consenting to the primary forces of our emotional nature.

It is a common clinical observation that, with the beginning of failure of higher psychical control, the more mechanical laws of cerebration are brought more freely into play, and we come at last to the phenomena of weakening attention as the index of the more spontaneous flow of ideas along the paths of habit and association. Fatigue of the power of voluntary attention, which goes along with cerebral fatigue, is equivalent to the beginning of the failure of control.

In the mental conditions last described, the symptoms of general and cerebral neurasthenia thus developed reveal the importance of the attention, and the high office of its voluntary power in respect to all mental activities. In the abatement of natural vigor in any of them, the physician should see signs suggestive of neurasthenia.

(To be continued.)

[48] Op. cit., p. 19.
[49] Physiology of Mind, 3d Ed., p. 316.

Original Articles.

OBSERVATIONS ON THE SUPPRESSION OF INFECTIOUS DISEASES.[1]

BY J. H. McCOLLOM, M.D., OF BOSTON.

In this paper an attempt will be made to show what has been done, in Boston, during the past ten years in the suppression of the three principal infectious diseases, small-pox, scarlet fever and diphtheria, and, also to offer a few suggestions regarding the best methods to be employed for this purpose.

At first your attention will be asked to the subject of small-pox; a disease much more dreaded in the

[1] Read before the Massachusetts Association of Boards of Health at Newton, April 29, 1891.

community than any of the other infectious diseases, and without reason, for in no other disease do we have the protective power of vaccination.

When we read the accounts of the fearful havoc that this disease caused before the discovery of vaccination, it is difficult to understand how any sane person can be in doubt for a moment regarding the advantage to be gained by this operation. It is painful to witness a severe case of scarlet fever; an attack of diphtheria is distressing alike to the patient and his friends; but an attack of unmodified small-pox in the amount of actual suffering, in the repulsiveness, in the intolerable odor, and in the subsequent disfigurement far exceeds any of the other infectious diseases. One argument used by the anti-vaccinationists is that small-pox is not so prevalent now as it was formerly and therefore the necessity of vaccination is not so great. This is the very best argument in favor of vaccination, and it proves without a shadow of a doubt the beneficial effects of the operation. Again, the statement is frequently made that vaccination does not protect; this remark is so erroneous, and so entirely without foundation that it seems hardly necessary to attempt to refute it. No man of any experience in the treatment of small-pox has any doubt of the protecting and modifying power of vaccination.

I speak thus warmly in regard to this subject, because I know the immense amount of harm the anti-vaccinationists are doing not only in England but also in this country. It therefore becomes us as officers of sanitary commissions with the public health in our charge, to take a firm and steadfast position in regard to this matter. An argument frequently used by the anti-vaccinationists is, that the vaccine disease is not small-pox modified by its passage through the bovine species, but that it is a separate and distinct disease, and therefore it cannot be protective. The whole theory of the protective power of vaccination, which has been proved by innumerable experiments, is based upon the very fact that it is one and the same disease. An account of the latest experiments bearing on this subject is published in *La Semaine Médicale* of December 31, 1890. The investigators, Professor Elternod, of the University of Geneva and Charles Haccius, the Director of the Vaccine Institute at Lancy, are men eminently well-fitted to pursue these investigations. Their conclusions are:

"1. Small-pox is inoculable on the bovine species when the method of operation is good and when the virus is taken at the proper time.

"2. Inoculation of the calf with small-pox forms a valuable source, in a new direction, of animal vaccine. This is of great practical value, not only for the vaccine institutions of Europe, but also for those of warm climates, where variola is frequently endemic, and where vaccine rapidly deteriorates.

"3. Variola inoculated on the calf is transformed after several transmissions into vaccine by its passage through this animal. This is not duality.

"4. Our practical conclusions confirm the ideas set forth by Depaul in 1863, at the Academy of Medicine of Paris."

Dr. Fischer, Director of the Vaccine Institute at Karlsruhe in Germany, performed at about the same time a serious of similar experiments and he arrived at practically the same conclusions. This refutes the argument of the duality of these diseases.

The history of the great epidemic of 1872–73, in Boston, and the comparative freedom of the city from this disease since that time are most convincing arguments in favor of vaccination.

The operation of compulsory vaccination was suspended in Zürick, Switzerland, in obedience to popular clamor in 1883. The deaths from small-pox, per 1,000 deaths from all causes for the two previous years and that year had been in 1881, 7; in 1882, 0; in 1883, 8. They rose after compulsion had ceased to be used to 11.45 in 1884; to 52 in 1885, and in the first eight months of 1886, to 85 per 1,000.

Without wearying you with an immense amount of statistics, it may be of interest to state that for the past ten years the percentage of deaths from small-pox in the unvaccinated at the hospital in Boston has been 75, while of the vaccinated it has been only three. This, however, does not give a perfectly clear idea of the situation, for many of those who had been vaccinated did not have typical scars, and also in many instances the operation had been done a very long time previous to the attack of variola. There is no fatal case on record at the hospital in which vaccination was done within five years of the attack of the disease, except in those instances in which the patient was vaccinated at the time of exposure, and even then, if the operation was done within five days of the exposure the disease was always modified, to a remarkable degree.

The effect of one vaccination does not always last for a lifetime, and therefore the importance of re-vaccination is perfectly evident. For the ordinary exposure, in the routine of daily life, two or three vaccinations, at intervals of ten years, are sufficient; but after any extraordinary exposure a person should always be vaccinated.

In regard to the kind of virus to be used, I would say that my predilections are decidedly for animal lymph; because the protection is greater; because you can always be sure of an adequate supply for any emergency; because there is no danger of communicating syphilis. The possibility of communicating any other disease than this is so slight that no mention need be made of it. That certain eruptions do follow vaccination, and, owing to some inherent vice in the individual constitution are, in a measure, dependent on the operation no one with any experience will pretend to doubt; but these eruptions are acute in their nature and yield readily to treatment. A very common example of this condition is an eruption of urticaria following the ingestion of lobsters, or of strawberries, yet no one for a moment thinks of considering lobsters and strawberries unwholesome food. It is an interesting fact that young adults, and more particularly young immigrants, are liable to have these eruptions. In order to illustrate how frequently vaccination is unjustly blamed for the appearance of an eruption, I wish to relate the following case which occurred in my practice some few years ago. A perfectly healthy child, five months old, was vaccinated with fresh calf lymph; at the end of eight days the vesicle was perfectly typical in appearance and there was the usual amount of constitutional disturbance. At this time the mother of the child, who had never been vaccinated, expressed a wish to be vaccinated with lymph from the child's arm. This was done. At the end of four or five days the mother had a most extensive and general eruption of vaccinal urticaria with marked constitutional disturbance. If, in this case, the mother had not seen the lymph taken directly from her child's

arm no amount of argument would have convinced her or her friends, that the lymph was not impure. These vaccinal eruptions which are comparatively frequent, and which can be easily explained, serve as a never-failing source of argument against vaccination.

Let us now pass to the consideration of the measures to be adopted for the suppression of small-pox. In Boston, as soon as a case is reported, the patient is visited and the diagnosis verified. If the disease proves to be small-pox the patient, in suitable cases, is removed to the hospital with as many of the family as the circumstances seem to demand. The hospital is always ready to receive any number of patients. When the premises are vacated disinfection is immediately commenced. All persons in the vicinity, who have been exposed to the disease are vaccinated. There is a careful medical supervision of the infected locality until all danger of an outbreak of the disease has passed. Every inducement is offered for vaccination, which is free. The question of diagnosis is a very important one, and while it may be simple in a severe case, in a mild and modified form of the disease it is very often most difficult and perplexing. To give some idea of the difficulty of arriving at a positive diagnosis in these cases it is enough to say that during the past eight years there have been reported, to the Board of Health, as variola, about five hundred cases of eruptive disease of which only forty-four were found to be small-pox.

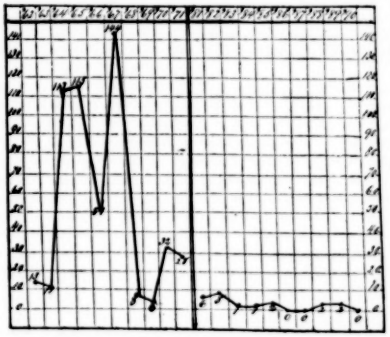

CHART A.

Deaths from Variola for Twenty Years—1862-71 and 1881-90.

Deaths 521, p. 211,865. Deaths 22, p. 425,250.

In former years this disease was much more prevalent in Boston than it has been of late; but this comparative immunity cannot be explained by the wave theory of epidemics, and must, therefore, be due to the management of the outbreaks of small-pox that have occurred. Chart A represents the number of deaths from this disease, in Boston for two decades; 1862 to 1871, and 1881 to 1890, inclusive. The years of the great epidemic 1872 and 1873, have been purposely omitted; because, as this was an exceptional time, correct deductions could not be made from them. It can be seen at a glance that from 1862 to 1871, with a population of 211,865, Boston had 521 deaths from this disease, while from 1881 to 1890 inclusive, with a population of 425,250 there were only 22 deaths. It is of interest to note that during the last decade immigration was very much larger than during the first. It must also be borne in mind that during the last ten years Baltimore, Philadelphia and Montreal have had moderately severe epidemics of this disease.

SCARLATINA.

Satisfactory as the result has been in the suppression of small-pox there is no such favorable showing in the case of scarlet fever, although much has been done and with improved methods still more may be done. As this disease is pre-eminently one of childhood, it is evident that the removal to a hospital cannot be so easily accomplished as in the case of small-pox, which attacks the unvaccinated of all ages alike, and rarely, if ever, attacks a vaccinated child. The existence of mild cases of the disease in the community; cases that are not recognized, and therefore are not reported and in which there is no attempt at isolation, is one of the most potent factors in causing the prevalence of this disease. Notwithstanding the great amount of good done by the isolation of reported cases, to expect that this disease can be stamped out when in the schools and in the public conveyances, there are so many mild cases which serve as centres of ever widely-extending waves of infection, is to expect an impossibility. The difference of opinion among physicians regarding the time when a case ceases to be infectious, is also a source of great danger to the public. Children are frequently permitted, on the certificate of a physician to return to school, while they are passing through the stage of desquamation, and are therefore particularly liable to communicate the disease.

In Boston, a child living in a house where there has been a case of infectious disease, before he can return to school must bring a certificate from a physician stating that two weeks have elapsed since the death, removal or recovery of the last case reported. This regulation is a wise one so far as it goes; but, while the period of two weeks is long enough in the case of death or removal, the time of recovery is so vague and indefinite that it would be much better to require the lapse of six weeks from the commencement of the last case.

The isolation of a patient at his house is a difficult thing, but by the liberal use of disinfectants, and with the most careful and painstaking attention to detail, it can be accomplished, if the house is large enough and is occupied by only one family. In the ordinary tenement-house it is impossible.

The *British Medical Journal* of June 11, 1887, contains a paper entitled "Observations on a Method of Prophylaxis and an Investigation into the Nature of the Contagium of Scarlet Fever," by Drs. W. Allen Jamieson and Alexander Edington, in which are found some very important and interesting facts. Without quoting at length, it will be sufficient to give a few extracts:

"The method recommended was to disinfect the throat by painting it frequently with a strong solution of boracic acid in glycerine. In dealing with the skin more exact methods were available. These consisted in the employment of warm baths every night from the very first, and in the application to the entire surface of the body, including the head, of an ointment composed of thirty grains of carbolic acid,

ten grains of thymol, one drachm of vaseline, and one ounce of simple ointment. . . . Seven cases were selected; the baths and anointing were persevered in from the second day of the disease till the eighth day of desquamation, the seventeenth or eighteenth day of the disease. An ointment for inunction containing carbolic acid in the proportion of one in sixteen, had formerly been employed. Now and again slight evidences of absorption of carbolic acid had taken place, and, therefore, in these seven cases, an ointment of only one in thirty-two was made use of. On the eighth day of desquamation one leg was once more carefully anointed, enveloped in a thick layer of sterilized cotton-wool, bandaged and covered with a stocking, and allowed to remain undisturbed till the thirtieth day. The wool was then removed by Dr. Edington, with the same precautions as in the other cases, and the scales transferred to sterilized tubes for cultivation. It will be seen that the wool was put on at a period of the disease before the bacillus had been obtained from the scales, in cases where no disinfectants had been applied to the skin. This method subjected the precedure, therefore, to a rather severe test. In cultivations of scales from five of the seven cases no bacillus was found. In two it appeared in the cultivating medium; but, whereas, under ordinary circumstances the bacillary pellicle is formed in thirty-six hours it took six days to develop any evidence of its presence in the jelly. In five, therefore, the powers of reproduction of the bacillus had been checked, by the method adopted, while in the two others a remarkable retardation of the virus had resulted. We submit, therefore, that proof clinical and experimental, has been furnished that by such simple methods one can neutralize the contagiousness of scarlet fever, so far as that arises from the desquamating flakes of cuticle."

The importance of the facts brought out by these experiments is so great that the account of them has been quoted somewhat at length.

DIPHTHERIA.

The difficulties of dealing with an epidemic of scarlet fever, great as they may be, are much increased in the case of diphtheria. In the first place one attack of scarlet fever, in the majority of cases, protects a person from subsequent attacks; in diphtheria just the reverse is true; the first attack predisposes to a second. In the second place perplexing as the diagnosis may be in a mild case of scarlet fever, it is still more embarrassing in a mild case of diphtheria. In the third place the erroneous opinion that true croup and diphtheria are separate and distinct diseases and that important as isolation may be in the latter, it is unnecessary in the former renders the stamping out of this disease an impossibility.

The investigations of Klebs and Loeffer; and the confirmatory experiments of Roux and Yersin show conclusively that the diphtheritic germ is not absorbed by the healthy mucous membrane, and that the frequence of this disease during an attack of tonsillitis or during the course of scarlet fever and measles is due to this fact. In these experiments it was found that simply painting the mucous membrane of animals with the culture fluid was not sufficient to cause the disease, but if the mucous membrane was wounded by a platinum wire charged with the culture, diphtheria was invariably produced. This fact also explains to a certain extent the prevalence of this disease in New England for it is apparent to the most casual observer that disease of the respiratory passages are more common here than elsewhere.

The degree of infectiousness of diphtheria has an important bearing on the subject of isolation. A very considerable amount of exposure is necessary to contract diphtheria and therefore a degree of isolation that would be useless in scarlet fever, would be effectual in diphtheria.

One very important measure for the suppression of these diseases is the disinfection of school-books, but advisable as this is there seems to be at present no safe and reliable method for accomplishing it. Sulphurous acid gas will not do this; heat, although it may kill the germs of disease, also destroys the books, and the same may be said of chlorine, and of a solution of corrosive sublimate. A series of very interesting experiments bearing on this point, was made some little time ago by two German observers, who found that, if the tips of the fingers were dry when turning leaves of books there was no deposit of microbes on them, but if the tips were wet with water or with the saliva a large deposit was found.

(*To be continued.*)

PRELIMINARY REPORT ON THE CLINICAL USE OF TUBERCULIN.[1]

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(Continued from No. 5, page 109.)

The last division to which I shall call your attention is that of the miscellaneous cases, including those which have been under observation for too short a time to make any conclusions possible in regard to them, and three cases which presented themselves for treatment, and which were in such a condition that treatment was refused.

SECTION IV.

MISCELLANEOUS. — CASES XLIII–LII.

Case 43. Boston. Admitted February 26, 1891. Service of Dr. John Homans. Born in Ireland, sixty-one years old, cook. Fair nutrition; good development and appetite. In June, 1889, underwent two operations for tuberculous affection of the knee-joint.

April 11th. Dose, .001 gm. Slight pain in knee, slight headache. No more than on other occasions.

April 13th. Dose, .002 gm. No reaction. Treatment omitted for the purposes of this paper.

Case 44. Medford. Admitted March 4, 1891. Service of Dr. John Homans. Born in Massachusetts, eighteen years old, single, nurse. General health good; well developed; good strength, nutrition and appetite; heart and circulation negative; temperature 98°; pulse 100; respiration 20. Disease began one year ago, following a fall on the right knee. Had no inconvenience directly after the accident. A month and one-half ago the knee grew stiff; and a short time ago struck the knee again, since which time it has swelled much.

Examination shows good extension and flexion, almost normal; the knee is swollen over the patella, especially the quadriceps tendon; a little tender on the inside of the patella, which does not float.

[1] Read before the Boston Society for Medical Improvement, May 11, 1891.

April 1st. Dose, .0012 gm. Back is sore; ice applied to knee.

April 6th. Dose, .0024 gm. Dizzy; increased pain in the knee.

April 11th. Dose, .003 gm. Headache; severe chills; treatment omitted.

Summary. — Number of injections, 3; amount used, 6.6 mg.; highest dose, 3 mg.; highest temperature, 103.4°, after the third injection of 3 mg.

April 28th. Knee in plaster splint. Improving. Discharged, not relieved (by treatment).

CASE 45. Hopedale. Admitted January 23, 1891. Service of Dr. C. B. Porter. Born in Rhode Island, nineteen years old, unmarried, painter. Family history negative. Disease began by a slip and fall one year ago. Examination shows the ankle much swollen, and also a swelling over the whole instep.

January 27th. Dose, .0012 gm. Pain increased in the ankle on the next day.

January 29th. Dose, .0024 gm. Pain still increased.

January 31st. Dose, .0036 gm. Pain increased during the afternoon and the next day. The ankle is placed in a stiff bandage. Discharged by Dr. Porter, to use cod-liver oil for a time.

Summary. — Number of injections, 3; amount used, 7.2 mg.; highest dose, 3.6 mg. (Chart lost, so no record of temperature attainable.)

CASE 46. East Boston. Admitted January 23, 1891. Service of Dr. E. H. Bradford. Spinal caries with abscess. The trouble dates back about a year. There is an abscess in the left iliac fossa, the size of an orange.

January 24th. Operation. Six ounces of pus evacuated.

February 21st. Dose, .0004 gm.; 22d, .0008 gm.; 24th, .0009 gm.; 25th, .0012 gm.; 28th, .0015 gm.; March 2d, .0018 gm.

March 4th. Dose, .0024 gm. Scarlet fever broke out in the ward, and the patient was discharged.

Summary. — Number of injections, 7; amount used, 9.1 mg.; highest dose, 2.4 mg.; highest temperature, 101.4°, after the fifth injection of 1.5 mg.

CASE 47. South Boston. Admitted February 10, 1891. Service of Dr. E. H. Bradford. Born in Boston, six years old. Mother died of phthisis. General health poor; anæmic; poor strength, nutrition, appetite and sleep; heart and circulation negative. Disease began with pneumonia, in December, 1890. Pus was found in the chest on February 8th, by aspiration. Signs of the fluid throughout the front of the left chest. February 10, 1891, a pint and one-half of thin pus was evacuated.

February 20th. Dose, .0004 gm. General condition fair; appetite fair.

February 22d. Dose, .0008 gm.; 28th, .0009 gm.

Upon March 3d, the mother was dying of phthisis, and, therefore, the patient was discharged.

Summary. — Number of injections, 3; amount used, 2.1 mg.; highest dose, .9 mg.; highest temperature, 104°, after the third injection of .9 mg.

CASE 48. Boston. Admitted January 29, 1891. Service of Dr. E. H. Bradford. Born in Boston, five years old. Disease began eight weeks ago, in hip. Operation performed on January 29th, and two pints of pus were evacuated.

February 20th. Dose, .0002 gm.; 22d, .0008 gm.; 24th, .0009 gm.; 26th, .0012 gm.

Gained constantly while the treatment was going on. Scarlet fever in the ward, and so was discharged.

Summary. — Number of injections, 4; amount used 3.1 mg.; highest dose, 1.2 mg.; highest temperature, 101.4°, after the first injection of .2 mg.

CASE 49. South Boston. Admitted February 17, 1891. Service of Dr. Bolles. Born in East Boston, seventeen years old, single, nursery-maid. Well developed; good strength, nutrition, appetite, and sleep; heart and circulation negative; urine, pale, neutral, 1008, no albumen; abdomen negative.

February 20th. Section of tendon of peroneous longus removed (the second operation) for four inches. The report from the old operation is a diagnosis of "tubercular teno-synovitis."

March 13th. The incision wholly healed except one inch in the centre, one-half inch wide. Red, healthy granulation.

March 24th. Lungs normal. Incision almost entirely healed. Granulating area the size of a one-cent piece. Discharge slight; no pain in the foot. Has grown fat since entrance.

March 27th. Urine normal, acid, 1020, no albumen.

March 28th. Dose, .001 gm. Bacilli from discharge, 0. Urine normal, acid, 1022, no albumen, calcic-oxalate crystals.

April 12th. Dose, .01 gm. Treatment omitted for the purposes of this paper.

Summary. — Number of injections, 7; amount used, 40.3 mg.; highest dose, 10 mg.; highest temperature, 103°, after the fifth injection of ten milligrammes.

CASE 50. Marion. Admitted March 1, 1891. Service of Dr. Forster. Born in Martha's Vineyard, forty-seven years old, married, physician. Family history of tuberculosis on both sides. Diphtheria in 1873; slight pneumonia in 1888, with a severe cough. Has had a cough ever since the attack of diphtheria. General health fair; hæmorrhage once; well developed; fair strength; emaciated; fair appetite and sleep; heart and circulation negative; no night sweats; temperature 97.9°; pulse 96; respiration 24; breathing easy; has a slight cough in the morning; slight expectoration; voice has been affected for two years; slight pain in the chest.

Physical examination shows dulness, with increased vocal resonance, broncho-vesicular breathing, and numerous fine and coarse moist râles over the whole right front; over the left front, dull, broncho-vesicular breathing, increased vocal resonance, with râles down to the third rib. In the back, on the right, the same signs of consolidation as in front; on the left back, the dulness, etc., goes just below the spine of the scapula. Over the lower lobe of the left lung, front and back, breathing is fairly normal, with only a few moist and dry râles. Could get no evidence of cavities in the lungs.

March 3d. Sputum bacilli, No. 9. Treatment refused.

CASE 51. Boston. Admitted March 3, 1891. Service of Dr. E. H. Bradford. Born in St. John, N. B., twenty-three years old, married, housewife. Mother, brother and sister died of phthisis. Mother's family consumptive. Never sick except present illness. Disease began with a cough, sixteen months ago. Menses have been scanty for the past few months. No hæmorrhages; slight loss of weight; well developed and anæmic; fair strength, nutrition and appetite; heart enlarged to the left; lungs normal; has had night sweats

for three or four weeks; temperature 102°; pulse 132; respiration 26; dyspnœa; is very hoarse; has considerable cough; thick and frothy expectoration, and a good deal of it; often vomits after breakfast. Urine normal, acid, 1019, a distinct trace of albumen, uric acid increased; it contained considerable sediment and many uric acid crystals; also hyaline, fine, granular, waxy casts, a little fat on the casts, and a few fatty round cells.

Physical examination shows dulness and bronchial breathing at the right apex, front and back; numerous fine, moist and medium râles, over both front and back, as low as the angles of the scapulæ. A few dry râles also over these areas.

March 6th. The morning temperature was normal, but in the evening ran from 101° to 102°.

March 8th. Treatment refused.

March 9th. Bacilli in the sputum, No. 6.

Case 52. Boston. Admitted January 29, 1891. Service of Drs. Mason and Rotch. Born in Virginia, twenty-two years old, waiter. Family history negative. Had gonorrhœa and chancroids several times, and influenza in the winter of 1889 and 1890. The disease began in August, 1890, after a severe run, having a hæmorrhage then; and this was followed by a severe hæmorrhage the next week. Temperature 99.6°; pulse 92; respiration 25; considerable laryngeal cough, which interferes with sleep; slight sero-purulent expectoration. Bacilli have been found in the sputum. Urine negative. Has had no trouble since August until seven weeks ago; then he took cold, and had a sore throat; has been very hoarse, lost his voice four weeks ago.

Examination shows dulness at the right apex, and numerous medium, moist râles; broncho-vescular respiration under the clavicles at the outer part, front and back; lower middle portion shows sibilant râles, prolonged expiration and a few moist râles; no dulness on the left, though there are some râles.

January 31st. Dr. De Blois diagnosed catarrhal laryngitis and thickened epiglottis.

February 23d. Temperature 100.5° to 102.5°. Treatment refused.

March 19th. Discharged worse.

Cases 43 and 44 (both affections of the knee, the first with a sinus) and the second without, were treated for too short a time for any judgment to be passed upon them. Case 43 showed no reaction, either general or local; while Case 44 had a very sharp rise in temperature and a marked disturbance of the general condition, as well as increased pain and swelling of the knee. The latter, however, may very readily have had nothing to do with the injections.

Case 45 (disease of ankle) was discharged by the attending surgeon before any change or conclusion could have been reached.

Cases 46, 47, 48 (all disease of the hip, and all in the Children's Hospital) were all discharged before any prolonged treatment had been given them, for the reason that scarlet fever broke out in the ward, and the parents took the patients home. One or two of them showed a gain in general condition before this occurred, however.

Case 49 (teno-synovitis) was discharged from the treatment soon after it was begun, for the reason that, in order to gain time for making this summary, I was obliged to stop all hospital work temporarily.

Cases 50, 51 and 52 (all of pulmonary tuberculosis, and all with many bacilli in the sputum) were rejected for treatment, because the disease seemed to be too far advanced, or the strength of the patient was much weakened. The histories will be published in full with the rest; and it seemed to be proper to give a selection of such cases for the possible guidance of others.

The use of Gaffky's tables for the classification of specimens of sputum containing bacilli[5] has made it possible to make out certain curves that it will be of interest to show. Taking the absence of bacilli as representing 0, and then going on with his enumeration, we can build up a series of transverse lines running to ten. The lateral space is devoted to the dates of the examinations, each space being separated by a perpendicular line. Then dots placed high or low, as the case may be, represent the number of the bacilli, and when connected, give a very graphic representation of the variations of their appearance in the sputum.

Charts of this kind have been worked out very thoroughly for me by Mr. A. D. Hodges, a second-year student in the medical school.

A chart from the sputum examinations of Case 1 (pulmonary tuberculosis) shows a constant persistence of the bacilli, and their presence in pretty large numbers. A chart from Case 2 (pulmonary, laryngeal, and probably abdominal tuberculosis) shows first a high curve, — a marked diminution that apparently corresponds with the temporary improvement that was manifest in this case, — and then again a sharp rise. A chart from Case 3 (pulmonary) shows a general rise in the curve. A chart from Case 4 (pulmonary, and tuberculous scrofuloderma of the neck) shows a constant low average in the sputum, most of the time they being absent. A chart from Case 6 (pulmonary) shows a constant and marked rise from about the middle of the treatment, the last examination giving them in enormous numbers. A chart from Case 8 (pulmonary) shows two periods of rise and decline, the last leaving it higher, however, than at the beginning of the examinations. A chart from Case 9 (pulmonary) shows also a period of increase after the treatment was begun; then a fall, and a second rise, that up to the time of the last examination had not gone so far as did the first one. A chart from Case 11 (pulmonary, and of knee) shows a very remarkable and persistent fall after the first of the treatment. A chart from Case 12 (pulmonary and laryngeal) also shows a very remarkable and persistent fall after the first of the treatment. A chart from Case 17 (supposed pulmonary tuberculosis) *never showed any bacilli*. A chart from the sputum of Case 25 (tuberculosis of tongue and lung) shows a constant climb, highest at the last examination, and lowest at the times of the apparent improvement of the patient. A chart from the secretion from the tongue of Case 25 shows always a low average, but seemingly lowest at the times of apparent improvement in the lesion of the tongue.

The charts from Cases 11 and 12 are so remarkable that, although by themselves they show nothing, it seemed to be a matter of importance to find out whether anything similar would occur in the ordinary course of the disease as it advances, or exists under ordinary treatment. Fortunately the means for this

[5] Mitt. a. d. Kais. Gesund., Bd. II, 1883.

comparison were easily at hand in two ways. The first was from some work of my own, embodied in a paper read before the Massachusetts Medical Society in June, 1883; for the purposes of which I had made a similar series of examinations and charts. These charts are five in number. They represent the results of examinations extending over about three months at the same season of the year as the first series; are classified in a similar manner; and show *exactly the opposite* of what is seen in the new charts of Cases No. 11 and 12, that is to say, that there is a *very evident* rise of the curve as the time of the examinations extended. The second means for comparison is with work not done under my direction or by me, namely, in the results of the sputum examinations given by Gaffky in the same place as cited above. A series of examinations is there recorded of the daily number of the bacilli in the sputum; and when they are plotted out, the curves show the same point as do those made by myself, — a constant and steady rise as the disease progresses, or at least a holding of the same level, with never but once a drop at all like that shown in charts of Cases 11 and 12. This one drop being in a case that died shortly after the examinations were begun, but in which there had been a constant and steady improvement in the condition of the patient, death occurring from peritonitis after swallowing about sixteen or eighteen prune stones. The conclusions that may be drawn from these facts are, of course, not final; but the facts are certainly of interest, and possibly of great importance.

I hope that I have so reported the cases, that it will not be necessary for me to state that, in many of them, at least a part of the improvement noted has been due to the more favorable surroundings of hospital life and care; but to make the matter certain, I wish to say plainly, that in all cases this influence has been fully considered and given due credit in making up the results. In some of those marked as relieved, this influence has undoubtedly played a marked part — exactly how much, it has seemed to me better to leave to each one to judge for himself, as it will not be difficult to do when the full records of the cases are published. But with all that excluded, there are some effects that have been seen that are unexplainable to my mind by this beneficial influence alone.

My experience with tuberculin, has apparently corresponded with that of most others, and with what I saw in Berlin. There is a marked and rapid improvement in certain cases, more especially those of external tuberculosis (including lupus), which goes on for a certain time and then stops, and the effect of the material is lost. The cases even begin to retrograde. Seen at a certain time after the treatment has been going on, the results for the future are very apt to be gauged by what has been accomplished in the first of the treatment; and this is precisely what happened in my observations in Berlin. I saw there the same — only more marked — improvement in cases of lupus, pulmonary tuberculosis, and surgical disease, that has occurred in certain of the cases here; but neither there nor here has the early promise been kept up.

The question then arises, How much real good does this material accomplish, and how far is its present form the one to use, if any good be accomplished by it?

Of the statements in regard to the material, the most interesting that I have seen, are those made by Arloing,[6] in which he says that he has been unable to secure immunity to tuberculous inoculation in guinea-pigs, — as did Koch; and he suggests an extremely important point, that deserves most careful consideration. He thinks it possible that cultures of the bacilli of tuberculosis become more or less attenuated in their growth — when this covers a prolonged period of time — and that possibly the apparent immunity of the animals experimented upon was due to the fact that the cultures used to test this immunity were *attenuated* in their virulence. That cultures of bacilli of tuberculosis *may* lose some of their virulence after long cultivation, and under varying circumstances that may be not intentional, seems to be undoubted. Arloing goes on to the conclusions, or rather suggestions, that the differences seen in the effect of tuberculin in the different classes of cases may be due to the fact that the bacilli concerned in the production of these different classes may be possessed of varying degrees of virulence, and may therefore be influenced in a varying degree by the material.

For example, he suggests that the bacilli of lupus and surgical tuberculosis may be of a less intensity of virulence than those in advanced cases of pulmonary disease or in acute miliary tuberculosis; and hence the cases of marked improvement reported in the first category, and the absence of them in the latter.

Kast,[7] of Hamburg, says — what is very true — that thus far we are not certain of the dose that we are giving of this material; and that, until the toxalbumin is separated and fully studied, it will be impossible to get at its exact action. As is well known, tuberculin does not pretend to be a pure material. There is estimated to be but one per cent. of the active ingredient in the flasks, as put upon the market; and it is quite possible that this amount may vary very considerably in the course of manufacture. It is unfortunate, to the last degree, that it was put upon sale, or distributed at all, before this point had been thoroughly worked out; but, at the same time, to those who are really responsible for the action should be given what criticism is due, and this judgment should be made very carefully.

M. and Ad. Jolles[8] have given a preliminary chemical analysis of "kochin," that may be of interest. They find fifty per cent. of water; absence of any traces of cyanogen or alkaloids; a strong albumenoid reaction; absorption band at the boundary of the green and violet fields between b and F, the absorption spectrum therefore agreeing with that of urobilin. The albuminate is precipitated with tannic acid, as a white voluminous precipitate, which is soluble in hot water, salt solution, and very dilute liquor potassæ. The elementary analysis and nitrogen determination give: N. 5.90 per cent., C. 35.19 per cent., and H. 7.02 per cent. From the results reached, therefore, the active principle of tuberculin is a toxalbumin.

In the Boston *Medical and Surgical Journal* of May 7, 1891, (page 467), there is an editorial speaking of the discussion before the German Medical Congress at Wiesbaden in April. A large number of clinicians took part in the discussion; and the editorial mentions the most important statements made. It is interesting to find that even now, so good a clinician as V. Jaksch, of Prague, feels that there is a diagnostic

[6] Rev. de Med., February 10, 1891.
[7] Deut. Med. Woch., No. 17, 1891, p. 610.
[8] Int. Klin. Rundschau, v. No. 1, p. 10, 1891.

value to be attached to tuberculin. He says: "It cannot be doubted that the discovery of Koch is of high diagnostic value; also, all my colleagues agree with me, that, by Koch's observations, therapeutics are led into a new, and, as it appears, a fruitful route." He goes on to say that the therapeutic results have not borne out the high hopes he had had, but — "and this I must lay stress upon, it is probable that four months is too short a time in which to make a final judgment in the matter."[9] The JOURNAL editorial closes in this way: "We sympathize as little now with those who are anxious to have the whole treatment thrown aside as utterly worthless, as we did previously with the ultra-enthusiasts who predicted that tuberculosis was soon to be a thing of the past."

Certainly no accurate knowledge of its action upon tuberculosis, as a whole, can be gained, except by the careful collation of statistics; and these statistics must have for their basis work thoroughly carried out in *all* the necessary branches of the investigation, with plenty of force to do it.

THE OTTAWA HOSPITAL OF THE SANTA FÉ RAILWAY EMPLOYEES' ASSOCIATION.

BY GEORGE W. NASH, M.D. (HARV.), OTTAWA, KAN.

THIS railroad hospital is situated in Ottawa, Kan., on a branch of the Atchison, Topeka and Santa Fé Railroad, fifty-eight miles south-west of Kansas City, and is one of the newer hospitals belonging to the Association. Being situated at a junction point, and readily accessible to all the larger points on the line, the location is an admirable one. Patients come from the Santa Fé Territory immediately contiguous, in Missouri, Kansas and the Indian Territory; in addition also, under the system of transferring patients from one hospital to another, the hospital has had men from almost every portion of the Santa Fé system, — Iowa, Illinois, Texas, Colorado and California all having furnished patients. This transferring of patients is an excellent feature in the Association, as out of the number of hospitals, climatic conditions may be found for about every case. Patients are admitted for care and treatment for disease as well as accident, the Association guaranteeing this in accordance with the plan of assessment. Since the opening of the hospital, June 1, 1889, up to date (April 20, 1891), there have been admitted 520 patients, the average being here about two medical cases to one surgical case. The medical cases under treatment are mostly acute troubles, although chronic diseases, as consumption, rheumatism and the like, are not excluded; of medical cases, typhoid fever claims by far the larger number. The surgical cases are of various kinds, and mostly due to the nature of the occupation of the patients, whether in the shops as day laborer or in train service.

There have been eleven deaths: one from septicæmia due to extensive laceration of the knee-joint (no operation allowed); one from shock and exhaustion, due to very extensive laceration of entire arm (no operation allowed); one from syphilis; one from pyo-pneumothorax; one gastric cancer; one from rheumatism; four from typhoid fever; and one from peritonitis.

When the nature and condition of the patients is taken into consideration, consisting of all classes and nationalities and representing all classes of employees, some being constantly exposed even in inclement weather, we think the mortality record is a very favorable one. For burial purposes the Association allows a certain ample sum for the proper and decent burial of the employee; and the friends, if they wish more elaborate furnishings, make up the balance.

The patients are received on the recommendation of the local surgeon first treating the case, and on their arrival are given a bath, the exception to this being seldom found. Hospital clothing is furnished by the Association, and, in addition, for those who need them, undershirts, drawers, socks, overalls, flannel coats and slippers are provided. As soon as a patient is admitted and the diagnosis made, his name is put on the diet list under its proper heading: "fever, sick, house diet, and house diet in bed" being those understood. A duplicate list is kept in the kitchen, so that an exact carrying out of orders is secured. The different dietaries are self-explanatory, although a few words may be said about them. Fever diet consists invariably of milk, egg-nog, beef tea and broths, and some of the different food preparations, as milk powder, Nestle's food, and the like; sick diet includes, in addition, at meal times, soft boiled egg, dropped egg on toast, dry toast, chicken and bread and butter, although the matron exercises discretionary power in each individual case, on consultation with the surgeon. These two dietaries have special times, 7 and 10 A. M., 12 M., 2, 4, 6 and 8 P. M. Naturally, in special cases, special times for giving nourishment are ordered. No rations are issued, each patient having all he may desire of the dietary ordered for him.

A bath-room is furnished specially for patients, and can be used at any and all times, no restriction as to its use existing. Patients' clothing is laundered for them in the hospital laundry; and at their departure care is taken that the patients are not obliged to carry any soiled clothing away with them. A Chinaman is employed, and it is found that he can manage all the washing needed in the hospital: ward and patients' clothing are washed on Monday, and returned Tuesday ready for use; house clothing and that belonging to the hospital employees are washed Wednesday, being delivered Friday. The laundry being fitted with a good dryer, drying the clothes can always be done in stormy weather, although sun and air drying is insisted upon as far as possible.

The care and cleanliness of the building is scrupulously maintained. The wash-room, water-closets, patients' sitting-room, and all halls are carefully cleaned daily; the ward floors are carefully cleaned with soap and water every alternate day, and carefully swept the intermediate days. To avoid unnecessary dust in the daily sweeping, parlor brooms are used, a soft damp cloth being pinned over the brush; in this way the sweeping is done with absolutely no dust. Dusting is also done with damp cloths, wiping being a more accurate term, feather dusters being tabooed as abominations. Beds, woodwork, chairs, tables and the more inaccessible parts of the rooms, are cleaned with soap and water, weekly. In addition, once a year all the walls are carefully scrubbed with plenty of soap and water, with a liberal addition of carbolic acid or corrosive sublimate. Good ventilation is continually maintained, fresh air always entering the wards, — through open windows in summer, and in winter through ventilators over hot pipes. If a man feels chilly, put on

[9] Von Jaksch: Deutsch. Med. Woch., April 16, 1891, p. 583.

more blankets, and not rush to close every ingress of fresh air, being the rule and observance. All litter, sweepings, lint and dressings are burned up in the boiler fires, as fast as gathered. The ward tables are kept as neat and tidy as possible, being simply used for what necessary articles a patient must have, and are not catch-alls for food, fruit, medicine bottles (which have a special closet), articles of clothing, and what not.

There are ten employees all told, as follows: Surgeon. Matron, who has charge of the housekeeping, and also has an oversight in the care of the patients. Houseman or orderly, who does the daily heavy cleaning in winter, he takes care of the boilers during the day, and in summer cleans the numberless windows. Male nurse, whose duty varies; he sleeps in a small room adjoining the wards, ready for call by electric bell from the patients, or from an arriving patient, and in winters keeps up the fires during the night. If any case needs special attention, or when there is a run of sickness, he remains up all night, getting needed rest during the day in another part of the house. In the morning, if not thus busy, he empties spit-cups and urinals, throws back the bedding in use, and helps the patients dress. The care of the patient's wounds and injuries is done as early in the morning as possible, and he assists the surgeon in this as well as in his operations. During the day, he is ready to help in care of patients, as may be needed, and has always found time to maintain a nice vegetable garden. Two women nurses are employed, who go on duty at 5.30 A. M., and whose work ends when the patient's supper dishes are cleaned. They have two hours for change and recreation every alternate day. They sweep and prepare the wards and rooms for the houseman, dust rooms, and make the patient's beds. They have the care of the inmates all the time they are on duty. In addition a cook, kitchen-girl, chamber-maid and laundry-man are employed.

The hospital itself is on the cottage plan, consisting of the ward building and administration building, both connected by a corridor. The ward building is long, and has but one story, containing two large wards with a hall between, each having twenty beds. Between these wards, on one side of the hall, are a small ward of three beds, a baggage-room, a dining-room for patient, which is also a sitting-room; on the other side of the hall are a bath-room, wash-room and water-closets, entrance from administration building, and nurse's room, with pantry. There is an outside door from the dining-room, by which patients may go in and out. The baggage-room is for storing patient's clothing, having as many stalls as there are beds, and numbered to correspond, so each man may easily know where his own clothing is. This room is constantly kept cleaned and ventilated, and thoroughly fumigated with sulphur yearly. Besides the overhead ventilation, and that secured by windows and transoms, there is a ventilator under each bed, connecting with the main chimney.

The administration building is two stories and a half high, containing operating room, apothecary office and dining-room and the necessary store and sleeping rooms for the hospital employees.

There are seven acres of ground belonging to the hospital, with apple orchard and vegetable garden; benches are put around in convenient places for lounging and shade.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

REGULAR Meeting, Monday, May 11, 1891, the President, DR. FREDERICK I. KNIGHT, in the chair.

DR. H. C. ERNST read a paper entitled

PRELIMINARY REPORT ON THE CLINICAL USE OF TUBERCULIN.[1]

DR. E. H. BRADFORD: Of course, I can only give general impressions in regard to these cases, because I have left the matter of record and inoculation entirely to Dr. Ernst; and, as we know, Virchow has said that there is nothing so fallacious as the general impressions of medical men. I shall therefore be very scant with my general impressions. There were but two cases that I referred to Dr. Ernst where I could state that improvement followed, I mean improvement in the clinical sense. The one was a case of excision of the wrist which I did. The case did well after the excision, a slight sinus being left, however. I etherized him to curette the sinus, and also to remove the portion of the radius which had not been removed during the excision. It was removed as it was diseased, and on the recovery there was a deformity left. At the second operation I was enabled to examine the tissues very carefully, and I must frankly confess that it seemed to be thoroughly free from any granulation tissue or œdema such as one often sees from excision of tubercular tissue.

The other case is the one referred to by Dr. Ernst, where the patient has made a noticeable improvement in the general condition. I am inclined to think that the improvement may be due to the tuberculin, though I am not positive as to the matter, because the hip disease was not of a very severe form. In his statement he notes that the patient is now walking about with crutches. I think that should be amended, for the patient received permission to walk about with crutches at the time treatment was undertaken. The patient has improved markedly, however, in general condition since the injection of the tuberculin, and the ulceration of the cornea which had not yielded, has yielded entirely under this treatment, whether for that reason, or otherwise, I don't know.

In regard to the other cases I should state that there had been no marked change.

DR. BOLLES: Of the cases Dr. Ernst reported, four were more or less under my care. They were all of them peculiar cases and interesting on that account. One of them, a case of tuberculous disease of the joint had been operated on some months previously, and I think persistent sinuses had remained, sometimes one and sometimes two. This condition had been going on for three or four months without any perceptible change, when Dr. Ernst undertook the Koch treatment with him. During the continuance of that treatment the patient had very marked, and, I believe, typical reactions. The physical discomfort was greater than that of the others. The patient looked during the several weeks of treatment, if anything, more poorly than before it. The condition of the knee-joint was unchanged, excepting after the first and second injections there was a certain amount of increase of turbid fluid, and

[1] See page 5 of the Journal.

after that I could not see any effect on the knee-joint by the injections, but the man did have pain in the small glands of the neck and pains running up and down the affected leg. After some weeks of treatment it was discontinued, and since then I understand his improvement was unusually rapid. That may look as if the treatment had had a retrograding influence upon him. I do not think that was the case, because up to the time of the treatment he had been stationary practically for weeks, and remained so during the treatment, and afterwards got well quite rapidly, and has gone about on crutches.

Another case was one with a questionable growth at the head of the fibula. The operation was done as a means of assisting diagnosis between tuberculosis, syphilis and sarcoma. It was a very ill-defined growth, and the history was very imperfect. This patient had, I believe, no reaction whatever, but did have an attack of pneumonia within one or two weeks of the first injection, and was treated for that and recovered and was returned to the surgical side of the hospital after I left duty. I inquired for him a few days ago, and found that the leg had been amputated, and that the tumor had proved to be sarcoma.

The two cases of pseudo-leukæmia were more or less under my care, and in them I was very much interested because I have always had a suspicion that there was a sort of relationship between pseudo-leukæmia and tuberculosis, and was very anxious that these cases should be tested with that in view. Dr. Ernst has given the result of them. One died afterwards in which there was no benefit during the treatment where the patient had a marked reaction, and Dr. Ernst reports finding once some bacilli in the sputum. He did not mention that in the course of this febrile reaction there was no evidence whatever of any reaction in the glands themselves. They were not, as I recollect, increased in size, showing that they were not, perhaps, concerned in the condition of tuberculosis which was partly proved by the reaction and by the discovery of bacilli. He died of pneumonia complicated by pleurisy.

The fourth case, where there has been marked diminution of the glands after treatment was discontinued, is very remarkable, and is at present too recent to form any conclusions in regard to it. The patient has had similar histories before, although not so marked as this present one. He had enlarged glands in the neck which, after continuing for some months and after the febrile reaction, did diminish very much and nearly disappeared in the way those of the chest have done, but I understand the glands were not as large as the chest glands were, and the diminution not so sudden and marked. The patient himself considered this a very remarkable subsidence. He is one of those cases who has always had paroxysms of fever coming on once in three or four months for the last few years. I think we shall have to watch him some months longer before deciding how much influence the treatment had.

Of the cases Dr. Ernst has reported two have died of pneumonia, that is two out of forty-eight or forty-nine, and these were cases also that were in the hospital, and those that were not cases of tuberculosis of the lung were not supposed to be particularly liable to pneumonia. Perhaps Dr. Ernst would state a little more definitely whether he considers the advent of pneumonia a possible complication of the treatment or whether he considers that it was entirely independent of it. Unless I misunderstood him, some of the cases which died following the treatment in Berlin, and he read the report from Virchow, died from pneumonia in one form or another. Is there a danger in using this method of treatment that we may bring on an attack of pneumonia of some form in our patients as a result of it? This Italian, who had sarcoma, had been in bed in the hospital two or three weeks, and there seemed to be no reason why he should be taken down with pneumonia. The other man was sitting up and about, and was a weakly subject, and bacilli had been discovered in his sputum, and that was not so remarkable, but the Italian seemed to have no reason for pneumonia.

Dr. J. C. Warren: I shall not attempt to go into detail in regard to the cases which I had, but merely state my general impressions. The cases which I had varied greatly in their general characteristics. One was a case of lupus of the most typical character. I shall not have much to say about that case. Dr. White will speak with more authority about it. I will merely say this, that at first there was a very marked improvement. Everybody felt very enthusiastic about it. I have not followed the later history. I understand there has been a return.

One case I have followed pretty carefully from the beginning. That was a case of lupus of the tongue. It was an undoubted case of tuberculosis, because I removed a specimen which was examined microscopically by Dr. Whitney, and was a most typical specimen of tubercle. It seemed to me a particularly favorable case for study, because there were no crusts or scabs, and yet it could be examined, and one could see exactly in what condition it was in the beginning. At first, there seemed a certain amount of improvement. Certainly I was very much disappointed in the general reaction which I expected to see from the cases which were reported in Berlin. I expected to see that tongue swell up, and great exudation take place, etc.; I did not see that. There was a gradual healing of the ulcer so that it nearly all healed, but at the present time the nodule is larger than it was before and the ulcer is two or three times as large as it was before and is decidedly worse. The general condition of the patient, however, seems to me to improve very decidedly.

Some of the other cases I see on the list I do not consider proved much one way or the other; for instance, that case of sinus in the chest where after trying a little while the injections I decided to resect the rib, and see what there was, and found a drainage-tube which had been put in at some previous time. I understand Dr. Ernst has said it has improved very much since then.

Another case was a case of syphilis which was not practically treated, because it was found not to be tuberculous, and has improved very greatly under iodides.

Another case was tuberculosis of the bone; and I think we ought to remember this fact, that tuberculosis of the bone where there are sinuses is a mixed infection. We have bacteriologically the tubercle bacillus and the pyogenic cocci, and we may hammer away all we please at the tubercle bacilli and we shall still have that suppurating joint the same even if we clean out every bacillus there is there. The bone is disorganized. You can't make new bone with any remedy

we know, and we can only clear away the wreck there is there by a surgical operation; therefore, it seems to me, that those cases of bone tuberculosis which are brought forward as experiments are not particularly suited for that kind of work. More suitable perhaps are the cases of tuberculosis of the lymphatic glands. The only case of that class was the case of the young woman who went home to die, where the disease was altogether too advanced to make a proper test. She had been under my care and that of Dr. Richardson a year before, and we had done two or three operations. After the treatment was begun there was found extensive internal tuberculosis.

Although that in a general way has been the result of my personal observation, I must say I would like to take this opportunity to raise my voice in protest against the undue reaction of feeling, which, it seems to me, has taken place against these experiments. I remember very well coming home from Europe about the time the antiseptic treatment was started. When I reached London I heard for the first time of Lister and his method of treatment. I came home in the course of the summer fully supplied with all the materials, which I procured from Lister himself who was at Glasgow; and when I arrived and informed some of the senior surgeons that I had the materials and was ready to undertake experiments, I was rather snubbed. They said: "O, we have tried and abandoned this carbolic treatment." We know how long it took for the antiseptic treatment to be introduced here. It was ten years after Lister first advanced it before it was accepted in Boston as the mode of treating wounds. I recently read over one of the clinical lectures written by Bergmann, who first performed these injections in Berlin, and was perhaps the most prominent figure amongst the people there in the carrying out of the treatment. His paper has for its title the treatment of lupus, and he has no cure to offer. His report is what we all know: at first improvement, and then return. His observations are interesting, it seems to me, because he had made microscopical examinations in given cases from time to time of the tissues, cutting out pieces and examining them to see the condition in the interstitial tissue and the tubercles themselves; and the effect of this treatment seemed to him to be like that of an acute inflammation supervening on a chronic inflammation or chronic ulcer. That is the familiar action of erysipelas on an old ulcer. It appeared to affect the tissue rather than any specific structures that existed there. Miliary tubercles were not affected at all, but the surrounding granulation tissue was congested, filled with exudation and at times gangrenous. I have seen nothing of those very intense reactions, and the reason appears to be this, that in reading over the accounts of his treatment very much larger doses seem to have been used in Berlin than here. Of course, the gentlemen who first started the treatment in this vicinity were anxious to be cautious and not produce any bad results, which was proper; but it seems to me that owing to that we have not had the results which they have got in Berlin. We have not seen any of those great swellings, sloughing out of sinuses or ulcers or infiltrated masses. I see that they give, not four or five milligrammes, but ten, fifty, five hundred, a whole gramme, two grammes at times in Berlin, and in that way they must get very much more marked results.

DR. T. M. ROTCH: A case of great interest to me was No. 12. This patient showed a decided diminution in the number of tubercle bacilli, but the physical examination of the lungs, which I made just before he left the hospital, showed that the disease had progressed rather than diminished, and that, although he had gained six pounds, he seemed to me very much like a large number of others who improve under various treatments while in the hospital. He did not seem to have made any great gain, and clinically was worse rather than better. The case was interesting as showing the discrepancies which may arise between the clinical aspect of a case and the bacteriological.

No. 32, the case of pseudo leukæmia, was also of importance, and will perhaps be spoken of more fully by Dr. Mason. It came under my care on February 1st, when I took charge of the ward, and at that time I supposed it was a case of tuberculosis. The chart showed the decided reaction of tuberculosis, and the injection treatment was carried out with that view. The man began to lose and to grow worse, and requested that the injections should be stopped, which, with Dr. Ernst's approval, was immediately done. Within a very short time his temperature went up and he developed the physical signs of pneumonia in the left lower back. The man died, and then the question was whether it was a case of tuberculosis or not. Dr. Gannett performed the autopsy, and the pathological diagnosis was pseudo-leukæmia and pneumonia. The bacteriological records of Dr. Jackson were, that in the first examination no bacilli were found, in the second none, in the third one bacillus was found, and in the fourth examination none. The case seems to throw doubt on the value of the temperature curve as a means of diagnosis in tuberculosis.

Case 11 I examined, and found no better and no worse.

DR. F. C. SHATTUCK: There is only one of these cases about which I shall say anything, Case 9, a private patient of mine, with limited pulmonary tuberculosis, who had improved decidedly under general treatment. He received the Koch treatment because he demanded it. I told him I did not advise it, but that he could have it if he wished. Throughout his stay in the hospital he was in my ward, and I could see no improvement in his general condition. The sputum lessened in amount, though the number of bacilli does not seem to have diminished. He said he felt better, and could laugh, which he was unable to do before undergoing the treatment. There was no gain in weight to speak of, and the physical signs increased in area.

The cases in which I felt special interest were those of cutaneous tuberculosis, in that they afforded the best opportunity of studying the effect of the tuberculin. These cases were furnished by Dr. White, and I am sure that you would rather hear his opinion of their progress than mine.

A number of people applied to me for the treatment, to whom I either absolutely refused to give it, or whom I advised to wait until we should know more about it.

Dr. Warren alludes to the tardiness of the profession in Boston in adopting Listerism, and seems to draw a parallel between that tardiness and the present feeling with regard to tuberculin. There were reasons peculiar to Boston, I think, for the slight degree of favor with which Listerism was originally received here. In this matter of tuberculin, however, it seems to me that the source of great and not unnatural dis-

appointment lies in the apparent failure of the establishment of a principle. We hoped that a fulcrum was perhaps secured which would enable us to profoundly influence the whole class of infectious diseases. We cannot help feeling that the results thus far reported here and elsewhere indicate that no speedy realization of such hopes is to be expected, to say the least. The sequences of the use of tuberculin are so inconstant, alike from a diagnostic and a therapeutic point of view, that very great scepticism is a necessary outcome.

Dr. A. L. Mason: I agree with Dr. Shattuck in his last remarks, and think that if this mode of treatment fails to fulfil the anticipations, there is no reason why the reaction against it should not be as great as the enthusiasm was premature. The diagnostic value of tuberculin seems to be impaired by the fact that a certain number of cases, undoubtedly tuberculous, do not give the reaction, and other cases which are non-tuberculous do. At least, those are the statements we have from Germany recently, and especially from the Surgical Congress lately held in Berlin, at which certain diseases, notably actino-mycosis and some forms of malignant disease, were said to present the characteristic reactions after injections.

For therapeutic purposes my experience is not large. Two or three cases which Dr. Ernst has referred to came under my care and have been already spoken of by Dr. Bolles and Dr. Rotch, at least one of them has, the case of pseudo-leukæmia. I should like to ask Dr. Ernst if he will state whether the finding of one bacillus in a single examination would be proof positive that that case was tubercular. He came from our out-patient department to the ward as a typical case of Hodgkin's disease, with symmetrical enlargement of the glands, cervical, axillary and inguinal, and development was very rapid. After death almost all the glands of the body were found to be involved, and, as I understand, no tubercular elements were present.

There is one other case which Dr. Ernst mentioned, — the tumor in Douglas's pouch. This patient improved after the series of injections, but the value of that as proof is lessened somewhat by the fact that she had come in in a febrile state with abdominal pain, apparently due to tubercular peritonitis. She was in a fair way to recover I think before the injections were begun, that is the fever subsided, pain diminished, and the abdominal effusion was absorbed. Later, pains started up again and the disease began to be more active, but there had previously been a cessation, so that the patient had been exhibited before the class as one in whom an attack of apparent tubercular peritonitis tended to spontaneous recovery.

With regard to the absence of reaction in tubercular cases the statement also comes from Germany that pregnant phthisical women give no reaction in a certain number of cases.

Although a good many cases presented themselves in my wards at the City Hospital for treatment I found only four which seemed to me suitable, in whom the disease was incipient at one apex with bacilli in the sputa, and in these four after a short time the injections were interrupted because the patients were made more uncomfortable. Three of them passed out of sight. One, perhaps the least advanced of all, with early phthisis at the right apex, is now at the Channing Home, having failed rapidly since the treatment was instituted. The indications for stopping it were great distress in breathing, pain in the diseased portion of the lung, and general discomfort, although in this case there was no febrile reaction whatever from the injection of one or two milligrammes of the Koch material.

One case of lupus only came under my care, sent in from the out-patient department by Dr. Tilden. This case was under treatment for four months, and has lately been taken away from the hospital by the parents, as there was no improvement whatever. The amount of fluid injected finally was one centigramme every other day.

Dr. J. C. White: After listening to the carefully prepared report of the reader one turns back for a moment with wonder and surprise at the character of the statements which first came to us from the home of the discovery of this reagent, and one wonders if it can be really true that these statements, which were made with every appearance of certainty, had really any foundation for their existence at all. It is now impossible to believe that they did, and one is inclined to account for the mental condition which these reporters and investigators were in, either on the basis of the peculiar form of mental condition — I hardly know how to classify it — which the discovery of new remedies seem to produce in some physicians, or else — and this is the most charitable view I think to take of the matter — that the cases which were at first reported, in which those remarkable cures were claimed to have been made, were cutaneous tuberculosis, and were reported by physicians who could have no educated judgment in such cases at all. They were not familiar with the ordinary events that take place in such forms of tuberculosis, periods of activity and retrogression, spontaneous changes. They were not dermatologists, and had no special knowledge about the disease. Certainly the reports made by the most competent dermatologists in Europe, a committee of the French Academy of Medicine, where the matter was studied with the greatest care, show, at least, that such results were not obtained in France, nor were they obtained in Madrid or Vienna, nor in various other parts of the world; and the statements given us to-night by Dr. Ernst certainly confirm these later reports.

Those claims were that this remedy had great diagnostic value, and that it also had curative properties to a marvellous degree. I shall confine any remarks I may make upon this subject to my observation in cases of cutaneous tuberculosis, which is the proper field for such observations, because we have there the means of making the real diagnosis in the beginning, and also because we can see the changes which may ensue.

Now it was early shown, and has been constantly demonstrated since, that it has no diagnostic value whatever, because in some cases it does not impress tuberculous tissue at all, and in other cases it does. It does not impress it in any diagnostic or peculiar way, for it produces precisely the same tissue changes in other forms of dermatoses; for instance, in the lesions of syphilis, carcinoma, lichen planus and leprosy. Moreover, it has absolutely failed to make any local impression whatever in some well-marked forms of tuberculous disease of the skin. It will affect one portion of the skin affected by tuberculosis, and another exhibiting the same character of lesion not in the slightest degree. It will affect one lesion and not another in individual cases. It will affect some cases in a very marked degree, and fail to affect other cases of cutane-

ous tuberculosis, so that it may be fairly said that it has been demonstrated that it has no practical diagnostic value whatever.

The other claim was that it was curative, and the reports that came at first of absolute cures in the early weeks of its use, we are all familiar with. Now the fifty cases of cutaneous tuberculosis which were studied by this committee in Paris in the Saint Louis Hospital in the most careful way terminated in not one cure. In not one of these cases which Dr. Ernst has reported of cutaneous tuberculosis to-night does he claim a cure. Seven or eight of the cases I had had under observation a long time previously, and had treated in various ways, and was familiar with their appearances. Some of these cases were affected by the injection of this substance. They became inflamed, — the tissues in which these lesions were seated. In one of the patients in which this change was most marked the normal cutaneous tissues all over the body became inflamed and to a very marked degree; and the patches of cutaneous tuberculosis in her case, which were already seats of chronic inflammation, were simply additionally inflamed. Now that is the only change that I have seen in all these cases, — simple additionally inflammatory reaction set up around some of the lesions, and not at all around other lesions in the same patient. In some of the individuals affected not the slightest local reaction took place, although general reaction took place, and the local and the constitutional reaction in these cases were in no way proportionate.

One of the cases that has been alluded to was first under Dr. Knight's care for lupus of the throat, then under my care for cutaneous tuberculosis; and she recovered under my parasiticide treatment, which I generally employ, remained well three or four years, then the disease was neglected, got a new start, and she was sent into the hospital. That was a case in which it was supposed a cure was going to take place. It is not cured. It stopped being acted upon by the remedy, and she is now under my treatment again in a very much worse condition than when she entered the hospital. I have within a fortnight run a stick of nitrate of silver down nearly an inch into the boggy cutaneous tissues of her face. Probably at the time she entered it could not have been made to penetrate more than one-fourth to one-third of an inch. In other words, she has become a great deal worse than before she entered the hospital under this treatment. How much the inflammation set up by the treatment about the parts had to do with the more rapid advance of the disease it is impossible to say.

Another case of marked disease was not influenced in the slightest degree; not the remotest degree of hyperæmia was set up around the lesions after two months of the constant use of this remedy.

In no one of the seven or eight cases which I have observed has there been any apparent cure, nor any change to warrant the conclusion that a cure could take place in my opinion. Certainly no real improvement has taken place in any one of them. Of course, seven or eight cases are very insignificant when contrasted with the large series of cases the French dermatologists have reported upon. Under these circumstances what hope is there for benefit by continuing these experiments? I think Dr. Ernst was the first to suggest stopping the treatment in most of the cases himself. He was satisfied that, at any rate for the time, they were not going to improve any more by the continuation of the injections. I cannot see myself that in this remedy, as it now exists, with our knowledge of its action there is anything to warrant the persistence of the experiments in this direction. I think that it has given us an important lesson in many ways, and that under proper scientific study, independently of clinical experimentation, it offers a promising field of what may possibly be attained by such work in the future.

DR. SUMNER: I had five cases under my care, all cases of phthisis pulmonalis. In all there has been an improvement; by improvement I mean gain in weight, either slight gain, or standing still of the physical signs.

DR. G. B. SHATTUCK: I have had five cases under my personal observation, most of them since the beginning of January, that is, cases which I have treated myself. I have had an opportunity to follow other cases that were under the treatment of Dr. Ernst at the City Hospital, and under the treatment of other gentlemen. I have not written up my cases, I may do so later. There happened to be among those five two cases which showed remarkable improvement, and I made a few notes in regard to them, in order to present them this evening, as I had the impression that the general tone of the discussion would be somewhat of the nature which it has shown itself to be, that is, rather unfavorable to the remedy. At the risk of demonstrating that I am a belated example of the unclassified mental disorder to which Dr. White has failed to give any name, I will read these notes. The cases are interesting and instructive, not simply because they improved, but for some other points in regard to them. Before giving the results in these two cases, I should like to state positively what Dr. Ernst has stated in regard to his cases, that I am trying to give the facts, without any prejudices, as nearly as I could get at the facts, and do not wish to be understood as saying that the results, which apparently occurred in these cases, were due to the treatment, but they did follow the treatment.

CASE I. M. O'N., female, sixteen years old. Landed in America early in October, 1890. Previously well, presently began to cough. Catamenia ceased. Parents living and well. Six brothers, five sisters; one brother with phthisis came to the City Hospital, December 5th. Percussion and respiration good throughout right front; left upper front, down to about third space, somewhat dull. Respiration broncho-vesicular, with medium, fine and subcrepitant râles. No change in voice or fremitus. Percussion over left back fair; coarse, medium and fine moist râles. Temperature 101°, pulse 100, respiration 40.

January 2, 1891. Left front, to third space, dull on percussion; respiration broncho-vesicular; medium and fine moist râles. Upper left back, occasional fine, moist râles. Lower third of right back, dulness, broncho-vesicular respiration, fine and medium moist râles. Weight 115½ pounds. Patient has been losing flesh and strength. Bacilli in the sputum.

January 3d. First injection .0005 gm.

Injections twice a week in gradually increased doses. January 21st, weight 126 pounds; 30th, 132½ pounds.

February 6th. Signs have improved over the left upper front and lower right back.

February 18th. Slight dulness and a few fine, moist râles on forced inspiration, left upper front; some over lower right back. Sputum much diminished.

March 30th. Weight remains the same. Good ap-

petite. Sleeps well. Good color. Catamenia returned in January, and has been regular since. Almost never coughs. No expectoration. Last examination of sputum, no bacilli. Does much work about the wards.

April 12th. Lower third of right back perceptibly dull. Respiratory murmur perceptibly altered. Quite numerous fine, dry, crackling râles heard at end of forced inspiration, over left front. Percussion slightly dull; occasional fine, dry râles with forced inspiration. Went to Ireland. Thirty injections in all; largest amount .016 gm.

CASE II. J. W., female, twenty-seven years old. Family history good. Entered the City Hospital, on account of stenosis of the larynx, early in November, 1890.

Examination of the throat, by Dr. T. A. DeBlois, November 6th: Uvula, tonsils, upper portion of pharynx red, but no ulcerations. Larynx filled with thick, yellow, tenacious mucus. Glottis and arytenoids thickly studded with ulcerated areas of a tuberculous nature. Examination of lungs: Left filled with sibilant and sonorous râles front and back, no change in percussion. On the right side there was dulness in front as low as upper margin of fourth rib, and behind as low as angle of scapula; bronchial breathing over these areas with coarse, moist râles; sibilant and sonorous râles over the rest of the lung. Tracheotomy was performed in the service of Dr. M. F. Gavin, on account of the laryngeal stenosis.

January 11, 1891. Patient steadily losing strength and weight. Weighs 89 pounds. Examination of lungs: Area of dulness under right clavicle and over upper right back; respiratory murmur over this area broncho-vesicular, occasional fine, moist râles. Patient has worn tube since tracheotomy. Bacilli in sputum.

January 12th. First injection .0005 gm. Injections were continued in increasing amounts twice or three times a week up to March, and after that once a week with occasional intermissions. Twenty-seven injections were given in all, the largest amount was .017 gm.

In February, the tube was removed; in March the weight was 113 pounds, a weight which was retained with but little variation. The active signs over the upper right lung disappeared, the sputum diminished, and no bacilli were found in the last examinations. The voice had returned in a great measure in May; there was a good degree of strength and a temperature, which, though at times irregular, varied much less from normal than before. The examination of the larynx by Dr. Farlow, May 7, 1891, showed left false cord nearly normal; left cord white and nearly normal; left arytenoid smaller and less cicatricial looking; right arytenoid smaller; right cord and false cord less red and swollen; though changes not as marked as on left side. Movement of glottis and cords much greater. Arrangements will be made, it is hoped, to keep this patient under observation under favorable surroundings through the summer.

In regard to the general question of throwing aside this treatment or continuing it, I agree with the concluding editorial paragraph to which Dr. Ernst alluded and it expresses my frame of mind, a frame of mind shared by the gentlemen who discussed the subject at the meeting of the New York Academy of Medicine last week, where Dr Kinnicutt and Dr. Jacobi reported a large number of cases. I believe these gentlemen took a more favorable view of the possibilities of this treatment from their experiments than has been taken here. Those taking part in that discussion, not only took a comparatively favorable view of the possibilities of this treatment, but all certainly seemed to think it worth while to continue the experiments.

Dr. F. C. Shattuck has alluded to the uncertainty and the variability of the results obtained. Now it seems to me that that is what we might expect from the extreme variability of the methods in which the treatment has been applied. We have the doses varying from one-half of a milligramme, I know a number of cases where the doses have not been over two milligrammes and I don't think we can draw any conclusion from those cases — up to the large ones which Dr. Warren has spoken of. One thousand milligrammes has not been an unusual dose abroad. Again where the frequency of repetition has varied from several times a day up to once a week, it is very natural that we should have a good deal of variability in the results, but it does not seem to me that it can be fairly considered a condemnation of the treatment. A good deal of the uncertainty, it seems to me, arises from the fact that Koch's hand was so forced at the beginning. Men are now experimenting in the way that it would have been better to have had experiments made earlier. Nobody is in a position to say, in general, whether it is better to give small doses frequently, repeated or large doses at longer intervals. And whereas we are not yet in a position to say this in general in regard to the treatment, we certainly are still less in a position, as yet, to determine in any individual case whether it is better to handle that individual case in this way or that way; and it seems to me, that rationally and reasonably, we should be willing to take sufficient time to determine such points as these.

DR. BRADFORD: A word in addition: The patient entered Dr. Gavin's service and was there tracheotomized. She remained there two months, and I can testify to the fact, that although the treatment was carefully carried out, her condition was a pitiable one, and so pitiable that she was on the point of being discharged as incurable. No change took place until Dr. Shattuck commenced the treatment by tuberculin, and her improvement has been steady since then. She had been a long time in the hospital steadily growing worse, and under the same conditions precisely she has steadily improved under the injection of tuberculin.

DR. J. G. BLAKE: My experience is confined to the observation of two cases, both middle-aged men with well-marked physical signs of tubercular disease in the lung. The observation was carried on for a month. My impression was very favorable as to the good effect of the treatment. I believe there is no question about increase in weight, and according to the report of the patients a diminution in the amount of the expectoration and a lessening in the frequency of the cough. I questioned them very closely almost daily while they remained under my observation, and certainly the impression which I received then was that the condition of these men was better than it would have been under any system of treatment which we have been accustomed to apply in similar cases. I believe the men left the hospital before the treatment could be fully tried, but the month they were in my ward their report was to the effect that they were steadily improving. What became of them afterwards I am unable to say. Those two cases left a very favor-

able impression on my mind as to the value of this remedy. Perhaps if they had continued longer they might have reached a stage of retrogression, but they had not done so. Dr. Ernst has reported the cases to-night.

DR. JEFFRIES stated that he had recently published some cases in the Boston *Medical and Surgical Journal* without any conclusions, and that he had now no conclusions. We began without conclusions in reference to tuberculin. We were told it was of diagnostic value, and that it was curative. Now we were making experiments to find out whether it was or not. He supposed in a few years we would know, but at present he did not consider that he did.

DR. F. C. SHATTUCK: When I spoke of the inconstancy of the results I was not speaking of the inconstancy of the results reported from all sorts of different places, treated in all sorts of different ways, but of the results we have seen in Boston where the cases have been treated with practically the same dosage and at practically the same intervals, and I think it is striking. Some react and some do not.

DR. G. B. SHATTUCK: I do not think it is any more striking than one would expect of most any treatment where it is applied under such a variety of conditions and in such a variety of individuals.

DR. ERNST: There seems almost nothing for me to say excepting in reply to one or two of the questions that have been asked. I have tried to report these cases as carefully and as cautiously as possible. If I had followed the conclusions in all of the cases, of the gentlemen in whose services they occurred, I think the proportion that were relieved would be increased. One of them is the sinus of the wrist of which Dr. Bradford spoke, and which he considered relieved. The case was relieved; but I have tried to be careful not to call a case relieved where I do not feel that everybody must agree that it must be so, and I have marked it as not relieved.

In regard to the child at the Children's Hospital, I did not know that she was at all in a condition to be about upon crutches. I spoke of that as one point in the conclusion that she was relieved. I certainly received the information from the house-officer that she was in a desperate condition before treatment was begun and had not been out of bed for a long while.

Dr. Bolles asked whether I believe that pneumonia may be caused by this treatment. I practically know nothing about it at all. I quoted Virchow's opinions at length, because I think that anything he says is worthy of all confidence, and if he saw appearances which made him feel justified in giving voice to such a suspicion, I should think it was a possibility to be looked out for.

In regard to the case of pseudo-leukæmia I do not know whether Dr. Rotch knows that the physical signs in the lung are on the surgical records upon December 2d, so that it is not possible that they came as a result of the treatment, and that is the reason it seems to me that we are perfectly justified in not ascribing any of the physical signs to the treatment.

DR. ROTCH: I spoke of it as being a case of pure pneumonia in a pseudo-leukæmia having nothing to do with the injections. I said I supposed I had a case of tuberculosis, but that at the autopsy it was found to be not a case of tuberculosis.

DR. ERNST: The autopsy records say acute fibrinous pneumonia, acute pleurisy. The man himself told me that he got a chill because the nurse left the window open on him. The temperature in the next three hours showed a rise of nearly six degrees. In reporting this case of pseudo-leukæmia I took especial pains not to give the specific name of tuberculosis to it. I most emphatically should not consider that the discovery of one bacillus in the sputum would justify me in making a diagnosis of tuberculosis. I believe I made the mistake in reading the record of using the words "bacilli were found in the sputum." It is perfectly true that a tubercle bacillus was found in the sputum upon February 11th. What I said in regard to that fact was that the presence of that bacillus made it necessary to suspend judgment in regard to the case, and not draw the conclusion that it was absolutely fatal to any diagnostic value of the material.

The uterine case that Dr. Mason speaks of is not put down, and not spoken of as a case of tuberculosis. It is distinctly spoken of as not presenting any signs of tuberculosis, showing no macroscopic evidence of tuberculosis, and I did not know that it had been considered a case of acute tuberculosis; and was getting well before the treatment began. I do not think there is a record of that.

DR. G. B. SHATTUCK: A point which has not been especially dwelt upon this evening is, in justice to Koch it seems to me, a point we always ought to bring up and to dwell on; that from the very first commencement of the use of his remedy he has insisted upon the stipulation that in pulmonary tuberculosis we should apply it to the very early cases, and according to almost all the reports which we have, it has been applied to a very large number of cases of late tuberculosis, and cases of early tuberculosis are the exceptions, and that is because it is excessively difficult in hospital practice, where we have to use this thing, and where it ought to be used, to get those cases.

NEW HAMPSHIRE MEDICAL SOCIETY.

THE New Hampshire Medical Society held its One Hundredth Anniversary at Concord, N. H., commencing June 15th.

DR. E. E. GRAVES read a paper on

THE TREATMENT OF EPITHELIOMA BY MAGNESIUM SULPHAS.

He reported eight cures where the treatment was three drachms of sulphate of magnesia to one pint of water, a teaspoonful of the solution taken four times a day. After the parts have been cleaned, a little dry boric acid or a small amount of carbolic acid ointment was used. No other local treatment was given. In most of the cases when the disease was first observed by the patient, it was manifested as a hard scale on the surface of the skin, or situated on a button-like eminence on the face, which had been there for many months and perhaps years. Some slight itching or stinging sensation might cause the patient to remove the scale for several times, and it might become a little thicker and harder each time, when finally on being removed there would be found a moist ulcerating surface which soon became deeper and broader. The edges became indurated and elevated, and we finally have a growth of a nodular character which by commensurate increase on its circumference kept a little in advance of the destruction which was going on in

the centre. There may have been a mistake in the diagnosis of all these cases; but it is a fact that whereas we had growths or enlargements of an elevated character with round or oval bases, whose summits were ulcerated or dark in color, with a discharge of an ichorous character, and those growths increasing perceptibly from one week to another, both in depth and in circumference, and pain of a pricking character, we now have a surface which is natural and healthy in appearance, and nothing to show it was ever diseased in the least.

Dr. J. J. Berry read a paper on

THE INTERNAL USE OF GERMICIDES.

His conclusions are as follows:

(1) The internal use of germicides is valueless in most cases of systemic infection. While they may alleviate symptoms, they possess no curative properties.

(2) Such agents have at times a beneficial effect upon acute gastro-intestinal diseases, and are of some value in those of a more chronic nature.

(3) Their remedial effects are not always due to the germicidal properties.

(4) Systemic as well as local disinfection, when required, is effected far better by eliminatives than by germicides.

Other papers read were: "Four Medical Men of New Hampshire," by Edward French; "Report on Gynecology," by Dr. Ellen A. Wallace; "Looking Backward," by Dr. A. P. Richardson; "Medical Education in New Hampshire," by Prof. C. P. Frost; "New Hampshire Surgeons and Surgery in the Past Century," by Dr. John W. Parsons.

On June 16th, the Society and its guests went for an excursion, taking the train at Concord at 10.30 A. M. to Lake Village, thence by rail, skirting the shores of Lake Winnipiseogee, to Alton Bay, where they took a steamer for the Weirs, and from there returned to Concord by rail.

THE ANNIVERSARY DINNER

was served at the Eagle Hotel, in the evening, and about one hundred and fifty guests sat down to the tables. The officers and guests of the society were seated at a table in the centre of the dining-hall, and among them were the President, Dr. Lyman B. How, Governor Tuttle, Mayor Clapp, Senator Chandler, Attorney-General Barnard, Bishop Niles, Dr. H. O. Marcy, Dr. D. W. Cheever, Dr. A. H. Johnson, Dr. Charles W. Lindsey, Dr. William H. Palmer and Dr. H. W. Williams.

At the close of the banquet the Anniversary Chairman, Dr. William T. Smith, of Hanover, said:

It is my privilege and pleasure to welcome, in the name of the society, our honored guests and fellows. They have to-day seen something of our beautiful scenery; they have listened to something of the work of the society; they have heard something of its history and we ask them to rejoice with us on this occasion. Why should we rejoice on this centennial of our society? Why does it awaken our enthusiasm and inspire us with devotion? Because the society is the embodiment of our ideal. The great men who founded it put into it whatever was best for themselves, and their successors have contributed of their best during the century which has passed. And when we come up here and make our contributions from year to year, we become a part of the Society and it becomes a part of us; its possessions, the accumulations of a century, are ours; and we are elevated and inspired, and we go back to our work stronger and better men. The true history of this Society is not alone the history of its great men; it is also the history of the humble and obscure practitioners scattered among the hills and valleys of the Granite State, who are putting to the test the theories of our art, and whose experiences are the storehouse from which material for scientific generalization is drawn. We are all descendants of Josiah Bartlett, more or less remote; but the name of one gentleman here proves his ancestry. I call upon our learned President, Dr. Lyman Bartlett How.

Dr. How: *Mr. Chairman, Fellows of the Society, Ladies and Gentlemen:*— I have no doubt you have been wondering why it was that a man born n Massachusetts should be elected president of the New Hampshire Medical Society, and why I should be called upon to make a speech on this occasion, since it is well known that I am not an orator. On my mother's side I am related to the Dearborns and the Choates. My maternal grandfather was a relative of John Henry Dearborn, who was a physician and was Washington's right hand man in the Revolutionary War. My maternal grandmother was related to the Choate family of which Rufus Choate was a member: so you see there is a hereditary tendency both to blood and eloquence; but, as my homœopathic friends would say, it is in a highly attenuated form, and I cannot satisfy myself that the attenuation in this case increases the potency. On my father's side I am related to the Hows, some of whom may have been very distinguished. Dr. James How, of Rochester, was a very early member of this Society, he was a surgeon during the Revolutionary War.

Looking around the table, I see delegates from our sister societies. In behalf of our own society I voice the unanimous sentiment when I return to your societies hearty thanks for your sacrifice in coming up here into New Hampshire this extremely hot weather. It has not been the fortune of New Hampshire men to make many discoveries in the science of medicine. We have been practical men here. We have held a very honorable position, perhaps, in some of the departments of operative surgery. No matter on which side of the State lines improvements and discoveries have been made, we feel that these discoveries and improvements are the common heritage of us all; and in the future as in the past may these sister societies march shoulder to shoulder firmly in the spirit of our profession. To day we have had the privilege of inhaling New Hampshire air upon the lake. To these mountains, no doubt, and to the clear and sparkling water that bubbles out of these everlasting hills, the vigor of our ancestors was in part due. I propose that we arise and in this beverage drink to the immortal memories of those worthy founders of our Society.

Brief addresses were made by Governor Tuttle and Mayor Clapp, extending to the Society and its guests a cordial welcome to the State and city.

Rt. Rev. W. W. Niles paid an eloquent tribute to the devotion and self-sacrifice of the medical profession.

Hon. William E. Chandler was next called upon. He paid the tribute of his homage, respect and admiration to these beloved physicians who give their powers to the wearisome and perilous labor of healing the sick, which absorbs their nights and days alike and exposes them to contagion and pestilence, while

it exhibits to them humanity only in disease and death. In one respect there is a greater responsibility upon the medical profession than upon either of the other so-called learned professions, and that is in thoroughness of preparation which physicians should have. A badly educated minister cannot do much harm provided his heart is right. An ignorant lawyer does not do much mischief because, if he loses his client's case, it is only the loss of money, and his client will soon find him out. But a man who enters upon the practice of medicine without long years of careful preparation is guilty of a crime against humanity. He believed that the profession in this country, as well as in others, are conscientiously endeavoring to elevate the standard, and young physicians taking the field to day are better prepared for their work than the young men of other professions.

ATTORNEY-GENERAL BARNARD congratulated the society for containing so large a number of good-looking men. He was not aware that this little State, which he thought so healthy, could support such a large corps of physicians; and he was also surprised that so many could be spared from their patients for three days at a time, but supposed that each physician left more medicine at his last visit than usual, the same as the ice-man leaves on Saturday enough ice to last over Sunday. He observed great improvement in the sanitary condition of the people during the last twenty years. In villages where typhoid fever then raged it is now hardly seen. People are living better, enjoying better health, and life has been extended by at least ten per cent.; and this is owing very largely to the efforts of the medical profession, who have made earnest efforts to educate the people in sanitary matters.

DR. MARY A. SMITH responded to the toast, "Women in Medicine." She said it was a matter for congratulation and encouragement that the Fellows of this Society should have deemed this toast worthy a place in its centennial exercises. Women physicians are here to stay. All they ask is an open field and fair play. In order to obtain a satisfactory medical education, she was compelled to become an exile in a foreign land to seek the opportunities which were denied her here. But the light begins to break, and it is to be hoped that it can soon be said that throughout the length and breadth of this land no medical school shall refuse to women the opportunities it gives to the other sex.

DR. H. O. MARCY was invited to speak for the American Medical Association. He said that Association is not quite half as old as the society whose centennial we celebrate. Some have thought that she she holds the position of step-mother to these eastern elder maiden sisters, and some of these eastern elder maiden sisters have doubted if she ought to come into the relationship she holds. But the Association has certainly been a fruitful mother, and she gathers into her family from every State in the Union, and represents nearly a hundred thousand physicians, who are brought into accord through this central organization. The progress of our profession during the last twenty-five years has been marvellous; surgery, an art at the outset, has become a science, and in the field of medicine we find one disease after another yielding to scientific investigation. Twenty-six States of the Union have adopted laws for the regulation of the practice of medicine, and we may predict that before long no physician will be permitted to practise until he has shown to a competent board that he is prepared in a certain large measure to fulfil his trust. Sanitary science has made great progress and is in itself a profession. The problem of the future is to be able to mass people together in great communities, while each individual may breathe as pure air as the dweller among New Hampshire hills, each may drink water as pure as that of the beautiful lake we sailed upon to-day, and build upon a soil as free from the dangers of miasma as are the granite hills of this State. It is but a short time to which we are looking forward for the happening of one of two things; either the science of to-morrow will give us the means of purifying our present water-supply in the city of Boston, or New Hampshire will be asked to furnish us with the pure waters of Lake Winnipiseogee, which I have no doubt she will be glad to do.

DR. A. H. JOHNSON said that hitherto a visit to New Hampshire had been associated with a feeling of refreshing by reason of relaxation from toil and the enjoyment of cascades and rushing streams. But to-day he came weighted with responsibility, bringing the salutations, congratulations and expressions of high esteem, best wishes and God-speed of more than seventeen hundred members of the Massachusetts Medical Society. Manifestly it would be impossible to transmit so great a volume of kind thought and feeling by any form of words which the time allowed; therefore many members of the Massachusetts Medical Society have responded to the invitation to attend these exercises, not to adequately voice the sentiment of the body they represent, but to manifest by their presence their desire to maintain the friendly communication between the societies which has existed for so many years. The natural scenery which we have admired to-day is a symbol. What more unlike than mountain and river? Yet without the former we cannot have the latter. Men as counterparts bring into existence better forms of thought and action than as homogeneous workers. The river makes its way to the ocean, thence to be lifted by the sun, and symbolizes by its flowings and distributions from the hills the courses of human thought and action. The spirit of learning for philantrophy's sake lifts us to heights of medical knowledge whence our acquired powers, through these societies, flow out to the vast round of varying human needs and promote the increase of life and happiness. The New Hampshire Medical Society, — May the wisdom and honor which it has obtained in the century past prove the root out of which shall develop a growth which shall bear abundant fruit for all seekers of medical learning, and which shall sustain all promoters of professional fraternity and enthusiasm in our country.

DR. D. W. CHEEVER said that as a son of New Hampshire he could not but feel pleased to be a visitor to this Society under such pleasant circumstances, and as a son of his father he could not but have been gratified with the honorable tribute which had been paid to his worth and excellence by one of the speakers during the meeting, as one of the earliest and most successful medical pioneers of medicine in this State. It is doubtful if the sons are equal to their fathers. It was their energy and talent, especially in surgery, which founded in this State, at Dartmouth College, one of the first medical institutions in New England. A great obligation is imposed upon us to keep up to

their high standard the work which they began. Harvard Medical School has gone through two severe convulsions in the reforms which it has endeavored to carry out. About twenty years ago it adopted a graded course, and made it longer than the former. As soon as this change was in successful operation, a second radical change was to require a preliminary examination in certain elements of liberal education. Next year, a third step is intended, and a four years' course will be required. Harvard Medical School feels some pardonable pride that, in the face of many obstacles, it has done something to advance the standard of medical education and place it more nearly on a level with that of other countries of the civilized world. Medicine is not what it used to be, and is not studied as it used to be. Modern discoveries and inventions have converted what was before an empirical art into a true science; and apparently we are on the eve of still larger discoveries, especially in bacteriology and microscopy, which will ennoble our art still more, until it shall have a place among the sister sciences as their equal.

Prof. Charles W. Lindsey said that he suspected that some practical joker had informed the chairman that he was a member of the Connecticut legislature, which had never done anything but talk. If he were at home he would not be called upon to speak, because there, as well as here, there are many better speakers. He compared the practice of medicine when he was young with the practice to-day, illustrating the differences with amusing instances. We can imagine that the practitioner of forty years ago would be surprised could he be called in consultation with us in these days. What would he think of bacteria, germicides, and all these things? Almost everything in the way of materia medica has been changed since that time. There is another change which is not so pleasant to contemplate. Not only are there the morphine habit, the alcohol habit and the opium habit, but there is the dose habit. The newspapers will not mention this, because they derive a good deal of their income from encouraging it by way of advertisements of medicines accompanied by ingeniously written descriptions of symptoms. A clergyman told an anecdote about one of his parishioners who had fallen into this habit, to the great distress of his family. His wife applied to the clergyman, and asked him to use his influence to dissuade her husband from the foolish habit. "Have you prayed for him?" — "Prayed for him! I go to church for nothing else, sometimes, but just to repeat that petition in the prayer-book which so directly applies to his case."—"I do not know what passage you refer to."—"Why, you know where it says, from all false doctrine, good Lord, deliver me." That petition ought to be put into the liturgies of all denominations, and at the head of all the big advertisements in the newspapers.

Dr. William H. Palmer said that the New Hampshire Medical Society commands honor by reason of its age and also for what it has accomplished. In the annals of this country are found the writings of its representative men. They are met with every day by the student of medical literature. Very important decisions have been rendered by an eminent jurist of this State establishing the important truth that a person may know that the act he is doing is wrong and in violation of law, yet be irresponsible for want of will power. It has taken lawyers a long time to accept this teaching of medical science, but to-day the doctrine of your eminent jurist is finding followers in every State in the Union. It is remarkable that two States here to day should claim the honor of introducing women into fellowship. I enter a claim for Rhode Island. If our secretary does not find that Mrs. Dr. Tyng was the first lady admitted into fellowship by any association in this country, his resignation will be in order. For a long time Boston and Newport were the only important towns in New England; yet not until 1812 was the Rhode Island Medical Society founded. The cause of this inertness was doubtless the "soul liberty" doctrine of Roger Williams. It grew into the idea of individual liberty. There is a feeling in Rhode Island that every person has an extraordinary amount of individual right. That is what kept it so long out of the Union. No forward step can be taken in medical legislation for it would be in violation of the doctrine of "soul liberty," and a man has the right to employ whom he will to kill him, and you cannot interfere.

Dr. William Child was called upon to respond to the sentiment, "Let a man step to the music that he hears." He said this is a sentiment you would naturally expect a young lady sophomore would select; but after all there is a good deal in it. When he started out he was not quite sure whether he had better be a doctor or a minister, but he finally concluded to be a doctor, and he had been digging away at it the best he could ever since. Moses heard the music in the oppression of his brethren, and in the burning bush, and again in the thunders on Mt. Sinai, and he stepped according to the music that he heard. But not having enough faith he did not get quite up to the mark set for him, and he did not get into the promised land; and the angels buried him. David stepped according to the music that he heard, though Satan got some notes into the score that set him stepping pretty high. But he has been the sweet singer of the Jews and Christians for all ages, and no doubt his psalms have been acceptable to the Almighty. Alexander, Cæsar and Napoleon stepped pretty high to the music that they heard,— but the angels did not bury them. There are physicians who, like Moses, hear the music, and are earnest and faithful in their work; like Moses they do the best they can, and they do deserve to be buried by the angels. There are those who march as David marched; they intend to march well, but the devil gets a few notes into the score, and they do not make such men as they would if they had marched to the true music. Then we have smart, keen men who march as Alexander, Cæsar and Napoleon marched. In former years men went into the medical profession with their elbows out towards everybody, and their main object seemed to be to raise themselves on the downfall of some one else. It is not so much so to-day. We have heard the praises of the dead ones rung to-night, and that is right; but I think some mention ought to be made of the living members of the Society, to whom so much is due for its prosperity and for the successful efforts of the board of health. I refer particularly to Dr. Conn and Dr. Watson. When they die, we will get up here and praise their memories; but what will they care about that? What will they know about it, perhaps? They should have the credit for what they are doing while they are living; and every member of the Society will heartily cheer these sentiments.

DR. H. W. WILLIAMS made brief remarks, urging the members of the Society and the eminent guests of the legal profession to do what they could to obtain the passage of healthful legislation to regulate the practice of medicine.

In conclusion, the CHAIRMAN said: *Ladies and Gentlemen,* — Our centennial day is ended. May God bless the New Hampshire Medical Society, may God bless us all, and when another hundred years have rolled away may those who stand where we stand have the same reason to be proud and glad that we have to-night.

On June 17th the reports of the council, delegates, and officers were presented and acted upon; and the election of officers was held, which resulted in the following choice: President, Dr. Moses W. Russell, Concord, N. H.; Vice-President, Dr. James H. Wheeler, Dover; Treasurer, Dr. Daniel S. Adams, Manchester; Secretary, Dr. Granville P. Conn, Concord. Executive Committee, Dr. C. R. Walker, Concord, Dr. G. D. Towne, Manchester, Dr. J. R. Kimball, Suncook; Anniversary Chairman, Dr. George D. Towne, Manchester.

Recent Literature.

Heredity, Health, and Personal Beauty. By JOHN V. SHOEMAKER, A.M., M.D. Philadelphia and London: F. A. Davis, Publisher.

This book of 422 pages is intended as a contribution to popular instruction in matters of health, and all things directly appertaining thereto.

A wide range is taken by the writer, and many matters are discussed *en passant* that seem to have little to do with the subject. The writer often shows a great fertility of expression and picturesqueness of diction; but, after reading many of the chapters, the impression of an astounding verbosity is all that we can retain.

In the introduction, the views of August Weissmann on heredity are discussed and combatted with a defence of Darwin and his followers, and Chapter I then proceeds to treat of the general laws of health. Then follow chapters on the law of life and growth, man's spiritual and physical place in nature, the evolution of the present era, the source of the beauty of the fair sex, the art of walking, and the evolution of the American girl. A good illustration of the author's exuberant style is offered in the chapter on the phenomena of evolution in the present era, where the following Macaulayism is to be found:

"In this democratic America, where only a few years ago the tail of the British lion used to be twisted on the Fourth of July and other high-days and holidays, and the public prints never tired of descanting on effete European monarchies and the absurdities of titular rank, valuable invoices of American girls yearly go to supply foreign needs, so that the day may come when the New Zealander, sitting on the broken arch of London bridge to view the ruins of St. Paul's, may find among the neighboring drift a stratum rich in specimens of an extinct female American type, associated with collapsed money-bags, while the opposite shores of the Atlantic may show contemporaneous deposits of banjos and microcephalous dudes. These, mingled with crania evidencing a highly intellectual status of present dwellers on the soil, will be the puzzle and despair of the future geologist to account for their presence in the midst of an evidently advanced civilization."

In the latter part of the book the practical subjects of bathing, care of the skin, hair and nails are quite fully treated, while short excursions are made into the domain of the eye, ear and teeth. We must acknowledge that these chapters contain much good (and some bad) advice, and also that the writer is frequently most amusing in his style and vastly entertaining, from his numerous anecdotes and citations from history. At the end of the book we find a long array of cosmetic articles and "household remedies" suited to a great variety of the less serious cutaneous affections. The propriety of inserting so many prescriptions in a book intended for popular reading is very questionable, as its effect is likely to be in the direction of encouraging people to make trial of remedies blindly selected from books, in affections which are already largely over-treated before they are brought to the notice of the physician.

The Intra-Cranial Circulation and its Relation to the Physiology of the Brain. By JAMES CAPPIE, M.D. 8vo, pp. 188. With four plates. Edinburgh: James Thin. 1890.

The present writer's views upon the intra-cranial circulation have already been published, and have met with due consideration from subsequent writers. In the volume before us he presents them again, and lays stress upon their relations to sleep and certain other physiological processes. He holds that "some forces acting at the capillaries have largely to do with the movement of blood through these vessels," — forces which may be regarded as vital attractions and repulsions. The thesis which he maintains in regard to the circulation is, that the mass of blood in the cranial cavity can be neither diminished nor increased directly. In sleep the capillary forces become relaxed, the veins dilate, and the arteries become less full. The capillaries are drained and the brain substance compressed. A similar condition is supposed to exist in coma. That this hypothesis has a bearing upon the problem of the intra-cranial circulation cannot be denied, and it probably possesses some truth. The author, however, seems to ignore the work that has been done of recent years, notably the exhaustive experimental work of Mosso, which proves pretty conclusively that this hypothesis is only a partial one, and that it cannot be accepted as conclusive.

Electricity: Its Application in Medicine and Surgery. By WELLINGTON ADAMS, M.D. Two volumes, 16mo; pp. 113, 129; 24 and 79 illustrations. Detroit: George S. Davis. 1891.

These two little volumes are a part of the Physician's Leisure Library for 1889 and 1890. They are written confessedly in a dogmatic manner, by a student of electro-physics as well as of electro-therapeutics, and in fact, the electro-physical side distinctly predominates. Electro-physiology and electro-therapeutics occupy only a subordinate place in the two volumes, which are devoted mainly to a consideration of the physics of electricity and to the practical application of electricity to the demands of medicine. Within these limits the work is a success. The first chapter discusses the elementary principles of electricity and magnetism in an admirable fashion. The old notions

which encumber many of the works on electro-therapeutics are exploded, and the elements of electricity are presented clearly and simply, so as to be readily comprehended even by those who have no previous knowledge of electricity. The rest of the first volume and two-thirds of the second are devoted to a practical discussion of the appliances necessary for the employment of electricity in medicine. Such a guide is of extreme value. The many new applications of electricity to medicine, such as the electric light, the electro-cautery, the electric motor, etc., have been disregarded in most of the text-books, the best of which have been written from only one stand-point, that of the neurologist; while the few works that touch upon these matters are written mainly in the interests of some maker of electrical apparatus. The present work favors no one maker. The different pieces of apparatus necessary are discussed from a scientific stand-point; the different instruments in the market are described, and their merits and demerits candidly stated. The author speaks dogmatically, and has pronounced opinions on the questions at issue; but in the main he is a wise guide, and that through a region to which no guide-book has before been issued. The attention of most writers on electro-therapeutics should be directed to his demolition of the prevalent notions that there is a difference between the current from the primary and the secondary coils, and from coils of coarse or fine wire. Static machines, storage batteries, dynamos, electric lights, electric motors, all are described, and much information is given to guide the physician in the choice of apparatus and in its use after it is chosen. The final chapter of the second volume is devoted to a very brief but clear and simple discussion of the principles of electro-physiology and electro-therapeutics. In view of the merit of the preceding portion of the work we could wish that this were fuller, but the author promises a work devoted solely to electro-therapeutics, which we shall await with interest, for, if it fulfils the promise of these two little volumes, it will give us what is much to be desired, — a good modern treatise on the subject; for those we have that are of value are already old and consider the subject chiefly from the neurological stand-point.

The Genuine Works of Hippocrates. Translated from the Greek, with a Preliminary Discourse and Annotations. By Francis Adams, LL.D., Surgeon. Two volumes in one. New York: Wm. Wood & Co.

This translation of all those treatises of Hippocrates now regarded as genuine, was prepared by Dr. Adams for the Council of the Sydenham Society. The translator's work is admirably done, and the publishers present the two volumes of the Society in one very handsome royal octavo, on laid antique paper, with wide-margined pages, uncut edges and cloth binding.

When it is Good to be at Home. — "Well, Maggie," asked a teacher of a little girl, "how is it you are so late this morning to school?"

"Please sir," was the reply, "there wis a wee bairn cam' to oor hoose this mornin'."

"Ah!" said the teacher, with a smile; "and wasn't your father very pleased with the new baby?"

"No sir; my father's awa' in Edinburgh, and dinna ken aboot it yet; but it was a guid thing my mither wis at hame; for gin she had been awa', I wadna hae kent what to dae wi' it." — *Sanitarian.*

THE BOSTON

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THE SIMIAN TONGUE.

Prof. R. L. Garner furnished a paper to the *New Review* (June, 1891), upon the Simian Tongue, in which he gives some details of his efforts to discover whether "articulate" speech prevails among the lower primates, and whether such speech, if existing, contains the rudiments from which the languages of mankind could easily develop. The result of his efforts encourages him to think it is quite possible to find proofs to show that such is the origin of human speech.

Having long believed that each sound uttered by an animal had a meaning which any other animal of the same kind would interpret at once, and observing that animals soon learn to interpret certain words of man and to obey them, replying in their own peculiar speech, Garner thought, if he could correctly imitate these sounds, he might learn to interpret them more fully and prove whether different species of animals had a uniform speech.

He made little progress in his studies in various zoological gardens at different places, until it occurred to him to avail himself of the aid of the phonograph. By recording on phonographic cylinders the sounds made by monkeys, he was better able to learn to imitate them himself, and at the same time by repeating with the phonograph the record made by one monkey to another it was possible to study the behavior of the latter more closely.

In this way sounds indicating "thirst," "hunger," "sick," "weather" "alarm," etc., were picked out. The capucine monkey was found to be the most favorable for study, apparently having the best defined language of any of his genus. The Chimpanzee is said to have a strong, but, monotonous voice, confined to a small range of sounds, and affords a fine study while in the act of talking, but there are only three in America at present.

Garner concludes, as the result of his observations, that the Simian tongue has about eight or nine sounds, which may be changed by modulation into three or four times that number; they seem to be half way be-

tween a whistle and a pure vocal sound and have a range of four octaves and probably all chord with F sharp on the piano. The sound used most is very much like "u" — "oo," in "shoot." The next one something like "e" in "be." No "a," "i" or "o" was distinguished. Faint traces of consonant sounds can be found in words of low pitch, but they are few and quite feeble.

The present state of speech has been reached by development from a lower form. Each race has its own peculiar language, slightly shaded into dialects, and the radical sounds do not have the same meanings in all. The words are monosyllabic. The phonic character of the speech of monkeys is very much the same as that of children in their early efforts to talk, except as regards pitch. It seems to obey the same laws of change and growth as human speech.

When caged together one monkey will learn to understand the language of another kind, but does not try to speak it. His replies are in his own vernacular. They use their lips in talking in much the same way as men do. Their speech is in about the same relative condition to their physical, mental and social state as that of man, and the more fixed and pronounced the social and gregarious instincts in any species the higher the type of speech. They reason from cause to effect, and their reasoning differs from that of man in degree but not in kind. The state of the language of monkeys seems to correspond with their power to think and to express their thoughts.

These reflections, if well founded, lead, of course, to the conclusion that the languages of mankind may be the progeny of the Simian tongue with as much probability as that the races of mankind may be the progeny of the Simian stock.

THE BOSTON DIRECTORY AND ITS LIST OF PHYSICIANS.

The Boston Directory, for the year 1891, has recently been issued. It contains 198,940 names, including the names of about 2,353 persons who have died or removed from the city within the past year. The Directory then contains the names of 196,587 living persons. In the back part of the book the inhabitants are again enumerated under their several occupations. Under the heading *Physicians*, there are enumerated 1,193 names, or one physician to every 165 names.

The list of physicians, so-called, includes 505 members of the Massachusetts Medical Society; 90 members of the Massachusetts Homœopathic Society, and 13 members of the Massachusetts Eclectic Society. There are also representatives of the Society of Specialists, the United States Medical Society and of the Women's Hospital Society, many of the latter society being also members of the Massachusetts Medical Society. Most of the remaining names are unaccompanied by any sign or name, but several are followed by some sort of a designation that is intended to characterize their belief, their sect or their practice. Among these designations are found eclectic, C. S. (which indicates Christian Science), mind cure, health lift, massage, scientist, eclectic and magnetic, vapor baths, electric, lung, massage and magnetism, omnipathic, midwife, salve, and electic.

This list for the year 1891 differs very little from the lists of the last few years; but when one remembers that there is no legal definition of a physician in Massachusetts, and, of course, no legally qualified physicians, such a list gains an importance which does not rightfully belong to it. Any person whose name appears upon this list is entitled to all the rights and privileges that belong to a physician, and consequently may sign a death certificate; certainly not because of the appearance of the name on the list nor yet to the exclusion of other names not on the list, but in common with others who claim the title of "Doctor." Such certificates go to make up our mortuary statistics. It is a question how much value can be inherent in statistics so made up, but they probably are much better than none at all.

The relationship of numbers to population is interesting. As was mentioned above, one name in every 165 in the Directory is that of a physician. Of course, the names in the Directory do not represent the total population. The population of Boston for 1890, according to the census returns, is 448,439. Accepting that number the Directory shows one physician in 375, certainly a liberal supply of doctors to inhabitants.

MEDICAL NOTES.

Philadelphia Polyclinic. — The Board of Trustees of the Philadelphia Polyclinic and College for Graduates have created a third Chair of Diseases of the Eye, and have elected Professor George de Schweinitz, M.D., to fill the position.

Leidy Chair of Anatomy and Museum. — It has been decided to raise a fund for the endowment of a Chair of Anatomy at the University of Pennsylvania, to be known as the Leidy professorship, in memory of Joseph Leidy, who held the professorship of anatomy for thirty-nine years. It has also been decided to raise a fund of $50,000 to establish a museum to be known as the Leidy Memorial Museum.

Comparative Mortality in England and Italy. — The gross population of England and Italy is about the same, namely, thirty millions, and while the mortality during 1889 in the former was 511,000, in the latter during the same period it was 820,000. This gives a rate 17.8 deaths per thousand for England, and 27.6 per thousand for Italy. Bad water and the absence of sanitary arrangements in the large towns are assigned as the causes of this high rate of mortality.

Cholera. — Telegrams from Alexandria, under date of July 21st, state that cholera is increasing at Mecca and Mouna in consequence of the massing of

pilgrims; 140 deaths occurred on July 18th and 380 on July 19th, chiefly amongst Turks. Rigorous measures are being adopted to prevent contagion reaching Egypt. No Egyptian pilgrims have been attacked, which is considered to be due to the wise measures taken in connection with the annual pilgrimage to provide as far as possible for the health and food supply, especially amongst the poorest.

The Medical Profession in Russia.— The total number of qualified practitioners in Russia, says a foreign exchange, last year was 12,521, and of these 409 were women. Thus there are about 8.4 doctors to each 100,000 inhabitants. The distribution, however, of medical men is unequal, as may be seen by the fact that in Siberia there are only 3.8 practitioners to every 100,000 inhabitants. Twenty-one per cent. of the total number of the profession is engaged in the military and naval services. The average age at which a student becomes qualified is 25.9 years, the women students taking twelve months longer than this. In Odessa, the average income is said to be about $3000 a year, in St. Petersburg $1850; in Warsaw $1250; in Moscow $1400; and with regard to the public services only two per cent. of the medical men are paid more than at the rate of $2500 per annum, while the salaries for the most part vary between $750 and $1250.

Dr. Max Rubner, director of the Hygienic Institute at Marburg, has been appointed to succeed Dr. Robert Koch as professor of hygiene in Berlin. He was born at Munich in 1854, established himself as a private lecturer in the University of Munich in 1883, was appointed extraordinary professor at Marburg in 1885, and ordinary professor in 1887. Koch has resigned his official positions in order to take the direction of the Institute of Infectious Diseases which has been organized by the German Government. It is stated that the Academic Senate will bestow an honorary office upon him, and that this will permit him to lecture whenever and wherever he pleases.

International Congress of the Red Cross. — The Red Cross Associations organized in the European States which have signed the Geneva Convention have had the custom of holding international meetings, at which the interests of the sick and wounded in war are practically considered, and the arrangements for a more effective and harmonious furtherance of those interests discussed and agreed upon. The first of these congresses was held in Paris in 1867, the second at Berlin in 1869, the third at Geneva in 1884, and the fourth at Carlsruhe in 1887. At this latter it was resolved that in future the congresses should meet every five years, the place of meeting of the succeeding congress being then undecided. The International Committee of Geneva has just proposed that the congress should hold its fifth meeting in Italy next year, and the Central Italian Committee, duly notified of the fact, has completed negotiations with the Government, according to which the congress will meet in Rome, in April or May, 1892.

NEW YORK.

College of Physicians and Surgeons. — The announcement of the College of Physicians and Surgeons for the session of 1891–92, states that on July 1, 1891, the institution became, under the authority of the Legislature, a part of Columbia College, and will in future be administered as such. This merger, which makes the medical department in a complete sense an integral part of the university system, promises largely to increase the usefulness of the medical school, to favor the thoroughness of scientific medical education, and to promote scientific research. The accessions to the teaching force, notably in the department of anatomy and in the physiological, pathological and chemical laboratories permit the realization, to a degree hitherto impossible, of the great opportunities for instruction and research afforded by the excellence of the dissecting rooms, the laboratories, and apparatus. By the new arrangement the members of the Faculty are placed upon regular salaries, which are entirely independent of the number of students.

Outbreak of Scarlet Fever in a Hospital. — Two children in Bellevue Hospital, aged respectively two and one-half and five years, have been attacked by scarlet fever and transferred to the Reception Hospital at the foot of East 16th Street. One of them, affected with rachitis, had been in the hospital for two years, and the other, under treatment for Pott's disease, had been an inmate for two weeks. The source of the infection is unknown, but it was probably introduced by some visitor to the children's wards.

Miscellany.

EUROPEAN COLONIZATION OF CENTRAL AFRICA.

Sir William Moore, at a meeting of the Epidemiological Society of London discussed the possibilities of Europeans as colonists in Central Africa, a question which has become prominent during the last few years in connection with the attempts of different European governments to develop that continent.

Africa lies almost entirely in the torrid zone, and is the hottest continent of all. So far as is known, for fifteen degrees north and south of the equator there is a mean temperature of from 80° to 85°; in some localities, according to Stanley, 87°. This is only equalled in Central Mexico, New Guinea, and the very north of Australia. Continued high temperature is the most important of adverse climatological factors and next to this is humidity; the two combined as in equatorial tropical Africa being the acme of a climate inimical to the European constitution. The west coast of Africa is perhaps the most unhealthy climate in the world. The east coasts from Cape Guardafui to Natal, present mangrove swamps and low-lying marsh lands, more or less for the whole distance. As regards the interior of Africa there is the Sahara Desert to the north, and the Kalapari sand tracts to the south of the equator, with an immense intervening more or less elevated region, much swamp land, and much forest land, supported by tropical rains, which,

in most localities endure during eight months of the year, there being two rainy seasons.

The climate of elevated regions of hot countries is really the climate of the plains, tempered by that diminution of heat consequent on elevation. There are the same seasonal changes on the mountains as on the plains, and there is the same vertical sun above. No doubt this reduction of heat is a great gain. But in Africa there are no elevated plateaus of sufficient height. To obtain a mean temperature of 51° such as of London, it would be necessary to ascend 10,000 feet in any country, where the mean temperature of the seacoast is 80°. Stanley was scarcely more than 2,000 feet high during his whole journey, and this is not a sufficient height to afford the advantages of elevation. The lands most favorable to cultivation are the broad tracts which border the rivers and lakes, or, in other words, exactly the places which are most malarious. We are certainly not very familiar with the diseases of Africa, but the following have been noticed: Asiatic cholera, on the coasts at least; beri-beri; dengue; endemic hæmaturia; elephantiasis; guinea-worm; leprosy; malarious fevers; negro lethargy; oriental boil; plague; scurvy; small-pox; tænia; tropical dysentery; tropical diarrhœa; tropical liver abscess; yellow fever; ulcer. This is a formidable list for the European to face, in addition to that anæmia which predisposes him to any disease. There is no doubt that a European possessing the suitable constitution may live long in a tropical climate, and especially in a tropical hill climate if he has no manual labor to perform, and if he takes care of himself. But this is not the question? The query is, can a locality be discovered, within the tropics, or even for a short distance without, where the European can live and labor, and get his bread as a colonist, and leave a healthy European stock? All experience and analogy tend to show this is impracticable.

AN EASY METHOD OF PLUGGING FOR EPISTAXIS.

Dr. A. A. Philip describes a ready method of plugging the posterior nares, which in his hands is both effectual and easily accomplished.[1] A piece of old, soft, thin cotton, oiled silk, or silk, about six inches square — a piece of an old handkerchief will answer — is taken, and by means of a probe, metal thermometer case, or penholder is pushed "umbrella" fashion into the nostril, the direction of pressure, when the patient is sitting erect, being backwards and slightly downwards. It is pushed on until it is felt that the point of the "umbrella" is well into the cavity of the naso-pharynx.

The thermometer case is now pushed on in an upward direction and then towards the sides, so as to push more of the "umbrella" into the pharynx, and is then withdrawn. The closed end of the sac protrudes well into the pharynx, and its open end protrudes at the anterior nares. The inside of the sac may be brushed with some astringent, such as alum or turpentine.

A considerable quantity of cotton wool is pushed well back to the bottom of the sac in the pharynx. Then, the thermometer case being held well against the packed wool, the mouth of the sac is pulled upon, and thus its bottom is drawn forward, and forms a firm, hard plug wedged into the posterior nares. The sac may now be packed full of cotton wool, dry or soaked in some astringent solution. The mouth of the sac is tied just outside the nostril, trimmed with scissors, and the ends of the thread secured outside.

In removing the plug, open the mouth of the sac, and, with small dressing forceps, gently remove the cotton-wool bit by bit. If there is bleeding, simply syringe the sac with weak carbolic lotion or Condy's fluid, and repack with clean cotton-wool. If there is no bleeding when the wool is picked out, gently pull out the sac, or if it be adhering to the mucous membrane of the nostril, apply a little warm water, and it may then easily be removed.

By this method no damage is done to the floor of the nose or back of soft palate by strings, etc., no disagreeable hawking, coughing, or vomiting takes place during introduction, and no disagreeable strings are left hanging inside the mouth.

[1] British Medical Journal, July 18th.

LOCAL TREATMENT OF DYSENTERY.

Dr. H. C. Wood calls attention to the local character of dysentery as usually seen in this climate.[1] It is not a constitutional affection, and should be combatted by local rather than general treatment. The ordinary treatment owes much of its influence to a local influence.

In acute dysentery, involving the colon high up, he has found large enemata, containing two or three drachms of subnitrate of bismuth, much more efficient than the exhibition of bismuth by the mouth. When the symptoms are severe, this local treatment may often be preceded with advantage by washing out the colon with large quantities of cold water. He has never used injections of nitrate of silver in acute dysentery, although the effect of the local application of the nitrate in other inflammations of the mucous membranes would justify trial of the remedy. He has seen in one or two cases, large enemata of very hot water injected without affording relief, and believes that hot water enemata are, in their ordinary results, not at all comparable with large injections of ice-cold water.

When the lower part of the colon is affected, the local use of ice sometimes has an almost marvellous effect. The author has seen the whole aspect of a very severe and alarming case, in which the symptoms indicated that the colon was affected high up, changed in a single hour by the continuous use of ice suppositories. While it is not necessary to have the pieces of ice entirely regular in shape, care should be exercised that no sharp edges are left. The suppositories should be rapidly used, one being put into the rectum every three to five minutes, so as to get, for at least half an hour to an hour, the effect of the continuous application of cold.

When tenesmus is very severe, iodoform suppositories are often much more efficient than opium in bringing relief. A remedy which has been from time to time recommended very highly in dysentery, but has not been much used, is ergot; and when the passages contain large quantities of blood, or are nearly pure blood, the extract of ergot would seem to be indicated. Dr. Wood has never used ergot by the mouth in these cases, but has employed suppositories containing twelve grains of extract of ergot and four grains of iodoform,

[1] University Medical Magazine, August.

used every two hours until four or five suppositories had been taken, with seemingly, great advantage.

The local treatment of dysentery is not advocated as a substitute for the use of mercurials, purgatives and ipecacuanha, etc., but as a very important adjuvant to the older forms of treatment. Nevertheless, in the author's experience, the effect of local remedies has been more prompt and decided than that of drugs given by the mouth; and in cases of any severity the attack upon the disease may be made from each end of the mucous tract.

A CASE OF ANNUAL SHEDDING OF THE SKIN.

A UNIQUE case is reported by Drs. J. Frank and W. C. Sanford.[1] For thirty-three consecutive years the patient has completely shed his entire cuticle and the nails of his hands and feet on the same day of the year, July 24th, and within a few hours of the same time of the day. On July 23d, 1890, he was admitted to St. Elizabeth's Hospital, Chicago, for observation, being at the time in perfect health. The patient's history is briefly as follows:

A miner by occupation, has been exposed to all the hardships of camp life, but has borne them with ease, being well formed, and apparently in perfect health. Skin perfectly normal. Has never had any of the eruptive fevers, and has never required the attendance of a physician. He was born in 1857. On the 24th of July following his birth he was suddenly taken ill, — vomited, became hot and feverish, and in a few hours the entire surface of the body was scarlet-red. Symptoms increased for three or four hours, when they gradually subsided, and the patient was supposed to have recovered; but on the fourth or fifth day following the attack the entire cuticle was cast off, and a few days later the nails of his hands and feet were also shed.

The patient first remembers the shedding in 1865, when the cuticle and nails were cast off while at play. These attacks have been repeated each year on the 24th of July, usually at 3 P. M., and never later than 9 P. M. The paroxysm begins abruptly. Patient has a feeling of lassitude and weakness of fifteen to twenty minutes duration, followed by muscular tremors, nausea and vomiting, a rapid rise of temperature, skin and mucous membrane of tongue and mouth become red and inflamed, and are hot and dry. No perspiration appears after the paroxysm begins until the cuticle is cast off. The acute symptoms begin to subside in from three to four hours, and are entirely gone by the end of twelve hours, with the exception of the redness of the skin which does not return to its normal color for thirty-six hours more. The patient has been delirious three times during these attacks, once for nine days. In his early life the cuticle began to be shed on the second or third day after the symptoms appeared, and was complete by the fifth day; but each succeeding year it takes a little longer, until now it is ten or twelve days before shedding is complete. The cuticle can be detached in large sheets, and he has always been able to remove it from the hands and feet in one piece in the form of gloves and moccasins. The nails are loosened and crowded off in about four weeks after the acute stage.

On the 24th of July, the day following his admission into the hospital, the above symptoms occurred with marked similarity. Careful records of pulse and temperature were taken. Between 3 and 4 o'clock marked constitutional disturbance began, lasting some hours and subsiding. The skin became red, the redness gradually subsiding during the next two days. On the 26th the epidermis of the mucous membrane of the tongue and mouth came off. From July 30th, to August 11th, the cuticle came off from different parts of the body in large masses, from the hands as gloves and from the feet as moccasins. The latter were worn as slippers some days after being shed, to protect the feet. The nails came off later.

[1] The American Journal of the Medical Sciences, August.

THERAPEUTIC NOTES.

PRURITUS SENILIS. — The *Deutsche medicinische Wochenschrift* gives the following treatment:

(1) Starch or bran baths once a day.

(2) At night the body should be washed with water at 104° temperature, to which the following has been added:

℞ Carbolic acid . . . . . ʒ ℈.
Aromatic vinegar . . . . . ʒ vi. M.

(3) A powder should then be dusted on, containing

℞ Salicylate of bismuth . . . . . ʒ iiss.
Starch . . . . . ʒ ij. M.

SANTAL OIL FOR COUGH. — Curtin[1] finds that sandal wood oil often gives relief to the cough in phthisis, catarrhal pneumonia, chronic bronchitis with asthma and influenza. It is given on sugar or floated on water.

NAPHTHALINE AS A VERMIFUGE. — According to Dr. Mirovitch[2] naphthaline is an admirable remedy, not only for ascarides, but for tapeworm. He considers it much more certain and far less poisonous than most of the other vermifuges. For adults he prescribes a fifteen-grain powder, to be followed immediately by two ounces of castor oil. For children the following:

℞ Naphthaline . . . . 4½ to 7 grains.
Castor oil . . . . . ½ ounce.
Essence of bergamot . . . 2 drops. M.

For two days before the dose the patient is directed to live on salt, acid and highly seasoned food, then the naphthaline is given fasting early the following morning.

MERCURY FOR GLANDERS. — Gold[3] reports two cases of glanders cured by inunctions of mercurial ointment, twice a day for a month, the patient being kept at the point of salivation. The effect on the mouth was combated with chlorate of potash gargles, and on the body suppurating spots were treated by poulticing, incisions, washing out with solutions of perchloride of mercury, and dressed with iodoform gauze.

OPIUM SMOKING IN PHTHISIS. — Dill[4] has obtained great improvement in several cases of phthisis by giving the patient tobacco to smoke which has been steeped in a solution of opium. In no case were any bad effects from the opium noticed.

[1] Philadelphia Hospital Reports, vol. i, 1890.
[2] Mererédi Médical, May 2d.
[3] Lancet, July 18th.
[4] Lancet, July 11th.

METEOROLOGICAL RECORD,

For the week ending July 25, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...19	29.92	75	84	65	84	66	75	S.W.	S.W.	16	12	O.	O.	.22
M..20	30.16	72	77	67	69	88	74	S.W.	S.W.	2	15	O.	O.	
T. .21	30.25	71	79	64	81	87	84	W.	E.	6	6	F.	C.	
W..22	30.37	68	76	61	67	67	67	N.	S.W.	3	9	C.	F.	
T..23	30.21	69	80	59	71	60	66	S.	S.	8	9	C.	C.	
F..24	30.01	66	74	59	81	95	88	S.	S.W.	12	5	O.	O.	.64
S. .25	29.89	76	84	67	70	81	75	S.W.	S.W.	12	8	C.	O.	

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, JULY 25, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,515,301	947	550	35.20	9.02	25.96	1.21	2.86
Chicago . .	1,099,850	591	368	42.33	6.12	29.92	7.99	1.53
Philadelphia .	1,046,964	547	279	31.68	9.72	25.38	1.32	3.06
Brooklyn . .	806,343	444	284	38.18	6.90	32.20	—	2.30
St. Louis . .	451,770	—	—	—	—	—	—	—
Boston . . .	448,439	281	157	35.52	11.47	33.30	1.48	—
Baltimore . .	434,439	230	125	39.99	9.89	36.55	.43	.86
Cincinnati . .	296,908	109	48	19.32	13.80	12.88	1.86	2.76
Cleveland . .	262,000	—	—	—	—	—	—	—
Pittsburg . .	240,000	136	79	32.56	8.88	20.72	2.96	3.70
Milwaukee . .	240,000	81	50	31.58	9.84	18.45	2.46	8.61
Washington . .	230,392	121	54	37.35	11.62	24.07	2.46	4.15
Nashville . .	76,168	42	21	33.33	9.52	28.56	—	—
Charleston . .	65,165	52	25	17.28	7.68	11.52	5.76	—
Portland . . .	36,425	13	4	23.07	7.69	15.38	—	7.69
Worcester . .	84,655	40	27	55.00	5.00	50.00	—	2.50
Lowell . . .	77,696	40	24	45.00	7.50	42.50	2.50	—
Fall River . .	74,398	55	37	43.68	14.56	41.86	—	—
Cambridge . .	70,028	42	30	54.74	11.90	47.60	2.38	—
Lynn	55,727	13	7	53.83	15.38	30.76	7.69	—
Lawrence . .	44,654	29	23	48.30	3.45	48.30	—	—
Springfield . .	44,179	28	15	67.83	3.57	64.26	3.57	—
New Bedford .	40,733	17	8	23.52	—	23.52	—	—
Salem	30,801	16	10	37.50	—	37.50	—	—
Chelsea . . .	27,909	4	3	—	—	—	—	—
Haverhill . .	27,412	12	7	25.00	25.00	25.00	—	—
Brockton . .	27,294	—	—	—	—	—	—	—
Taunton . . .	25,445	3	3	33.33	—	—	—	—
Gloucester . .	24,651	3	0	33.33	—	—	—	33.33
Newton . . .	24,379	4	2	50.00	25.00	25.00	—	—
Malden . . .	23,031	6	5	50.00	—	33.33	—	—
Fitchburg . .	22,037	5	2	20.00	—	20.00	—	—
Waltham . . .	18,707	3	1	33.33	—	33.33	—	—
Pittsfield . .	17,281	3	2	—	—	—	—	—
Quincy . . .	16,723	6	1	16.66	33.33	16.66	—	—
Newburyport .	13,947	3	1	33.33	66.66	33.33	—	—
Medford . . .	11,079	—	—	—	—	—	—	—
Clinton . . .	10,424	—	—	—	—	—	—	—
Hyde Park . .	10,193	5	2	60.00	20.00	40.00	—	—
Peabody . . .	10,158	2	1	—	—	—	—	—

Deaths reported 3,933: under five years of age 2,253; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,412, consumption 343, acute lung diseases 181, diarrhœal diseases 1,112, typhoid fever 90, diphtheria and croup 87, scarlet fever 37, whooping-cough 35, measles 25, cerebro-spinal meningitis 18, erysipelas 8.

From scarlet fever New York 23, Brooklyn 7, Chicago and Cincinnati 2 each, Philadelphia, Baltimore and Milwaukee 1 each. From whooping-cough Chicago, Philadelphia and Pittsburgh 6 each, New York and Washington 5 each, Brooklyn 3, Baltimore and Cambridge 2 each. From measles New York 12, Chicago, Brooklyn and Nashville 2 each, Philadelphia, Baltimore, Pittsburgh, Washington, Fall River and Malden 1 each. From cerebro-spinal meningitis Chicago 6, New York, Brooklyn, Washington and Lynn 2 each, Milwaukee, Worcester, Taunton and Newton 1 each. From erysipelas New York 3, Brooklyn and Boston 2 each, Chicago 1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM JULY 25, 1891, TO JULY 31, 1891.

Leave of absence for twenty days, to commence on or about August 5, 1891, is granted Surgeon CURTIS E. MUNN, U. S. Army.

Assistant Surgeon JUNIUS L. POWELL granted leave of absence for two months, on surgeon's certificate of disability, with authority for his admission to Army and Navy General Hospital, Hot Springs, Ark.

AN ARMY MEDICAL BOARD.

An Army Medical Board will be in session in New York City, during October, 1891, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before September 15, 1891, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from whence they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character and moral habits. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a regular medical college, as evidence of which, his diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon-General United States Army, Washington, D. C.

C. SUTHERLAND, *Surgeon-General U. S. Army.*

SOCIETY NOTICE.

THE AMERICAN SOCIETY OF MICROSCOPISTS. — This Society will hold its fourteenth annual meeting at Washington, D. C., August 10-14, 1891.

DEATH.

JAMES E. TOBEY, M.D., of Central Falls, R. I., died July 28th, aged forty-two. He graduated from the Harvard Medical School in 1872, after serving a year as Surgical House Officer at the Massachusetts General Hospital, and began practice in Central Falls, where he has since remained.

BOOKS AND PAMPHLETS RECEIVED.

"The Motive and Method" of Electricity in Pelvic Inflammation. By Geo. F. Hulbert, M.D., St. Louis, Mo. Reprint. 1891.

Painful Menstruation. The Harveian Lectures, 1890. By Francis Henry Champneys, M.D., F.R.C.P. London: H. K. Lewis. 1891.

Transactions of the Thirty-fourth Annual Session of the Medical Association of the State of Missouri held at Excelsior Springs, Mo., May 19, 1891.

Linear Craniotomy (Miscalled Craniectomy) for Microcephalus. By W. W. Keen, M.D., Professor of the Principles of Surgery, Jefferson Medical College, Philadelphia. Reprint. 1891.

The Pathology, Diagnosis and Treatment of Intercranial Growths. By Philip Coombs Knapp, A.M., M.D. Fiske Fund Prize Dissertation No. XLI. Boston: Rockwell & Churchill. 1891.

The Function of the Tuber Cinereum. The Inter-Brain: Its Relations to Thermotaxis, Polypnœa, Vaso-Dilation and Convulsive Action. Two papers by Isaac Ott, M.D., Easton, Pa. Reprints. 1891.

A Pathological Condition of the Lungs Hitherto Undescribed in this Country, but which is not Infrequent. By F. Peyre Porcher, A.B., M.D., one of the Physicians to the City Hospital, Charleston, S. C. Reprint. 1891.

A Clinical Text-Book of Medical Diagnosis. By Dr. Oswald Vierordt. Translated, with additions, from the second enlarged German edition, by Francis H. Stuart, A.M., M.D. Numerous colored and wood engravings. Philadelphia: W. B. Saunders. 1891.

Lecture.

NEURASTHENIA AND ITS MENTAL SYMPTOMS.[1]

THE SHATTUCK LECTURE FOR 1891.

BY EDWARD COWLES, M.D., SOMERVILLE.

(Continued from No. 6, page 128.)

The Sense of Effort, and Discharge of Energy in Attention. — A further development of symptoms may follow if the patient continues in a neurasthenic state. While the action of spontaneous attention is always without a sense of effort, as in its passive exercise in revery which may be restful, it may on the other hand when concentrated, as in continued worrying, be accompanied by expenditure of energy and cerebral exhaustion. Hence the maxim that worry is worse than work. But voluntary attention is normally accompanied by a discharge of energy and a sense of effort. The feeling of effort is at a minimum when the body is strong, but with increasing fatigue the sense of voluntary effort grows greater because more is needed to accomplish the same result as before. This of course is attended by a conscious sense of mental inadequacy through a sense of resistance to effort, which, added to the feeling of physical inadequacy already existing and accompanied by painful emotion, increases the force of self-depreciation. There is deeper depression, more intense worry, increasing cerebral exhaustion, and lessening mental control by will and attention.

Correspondence of the Train of Mental and Physical Events in Neurasthenia. — The preceding analysis of these conditions shows what may be the train of concomitant and increasing disturbances of nutrition: — there is local and then general inanition and irritating auto-intoxication, — then vaso-motor constriction, perhaps from irritative elements in the blood, and local or general anæmias, — or a vitiated blood-supply that does not nourish, — or again a hyperæmia from which we may infer a constriction-paralysis, in a condition manifested by a temporarily increased activity, and mental facility which is still a manifestation of inhibitory weakness. Thus a process beginning in the general organism, perhaps with disorders of digestion, may lead by a sequence of events to such results as these. The causes continuing, or being renewed after partial recovery, which may happen many times in a single case, the descent to graver degrees of exhaustion in melancholia may be accelerated by insomnia. This, we have to infer, is due to a hyperæsthesia from weakness and toxic irritation of the central mechanism.

The process may begin with an earlier event: — through necessity or mistaken zeal the individual overexerts his brain in mental work under the spur of interest and forced attention. Here is indeed purely mental initiation of cerebral exhaustion which may start the train of events even in a strong man. Then with an over-worked brain, and under-worked respiration and muscular movements, as in sedentary habits, the cerebral waste of tissue is increased and the nutrition is diminished, by both local and general conditions. Such a special condition, for example, as the uric acid diathesis may be engendered by deficient elimination. From a cerebral neurasthenia all the other events may follow. In this form, however, there may be failure of special functions, as of memory, for example, in some of its elements. A not infrequent symptom is forgetfulness of names and words, — the fatigued word-memory centres are slow in recalling, or the word-uttering centres are slow in acting, and there are symptoms of brain exhaustion with a hesitation of speech that is unduly alarming. The mental work of a physician or a lawyer is a good example of a peculiar strain of these central mechanisms. There is the daily continuous effort of listening to the details of medical cases, or to evidence and pleadings in some important cause, often followed by work at late hours. It is not strange that there should be a consequent condition of special fatigue of the attention and memory.

The Unity of Condition in Neurasthenia and Melancholia, etc. — The essential elements in all cases is, that the fact of a profound deterioration of nervous energy in the organic basis is represented mentally as a more or less vague sense of failing power, together with a conscious reduction of mental control. This is true alike for neurasthenia and melancholia, as has been shown.

Alienists have long recognized these morbid states as associated with variations of nutrition and as fundamental to melancholia, hypochondria, and other like disorders.

Meynert[60] believes melancholia to be a symptom of disturbance of nutrition of the cortex of the hemispheres dependent upon diminished blood supply. Benedickt[61] believes the neurasthenia is a psychic disease of cortical origin, due to emotion and overstrain, and that it is peculiar to the learned professions and business demanding trained, alert intelligence. Marcus[62] describes neurasthenia as a change in the functional tonus of the whole central nervous system, with increased excitability and tendency to exhaustion. The patient is always depressed on account of his incapacity, which leads to doubt, anxiety and hopelessness, with a feeling of inadequacy to ordinary effort. These patients are neurasthenic, he says, before becoming insane.

Thus it is to be seen that the neurasthenic condition, being dependent primarily upon nutritional weakness and presenting a train of definite mental symptoms, may, when once established, grow worse by degrees even to the profoundest melancholia, in which the same physical conditions and the same mental symptoms, from like causes as in neurasthenia, are present as a part of the characteristic group of symptoms. It may be said, as Beard tried to show, that neurasthenia is not melancholia, but it cannot be said that melancholia is not neurasthenia. Many cases called neurasthenia are as truly mild melancholia. It is a matter of the degree of exhaustion; in the graver degrees new symptoms are added. Further evidence of this is to be seen in the study of the intellectual symptoms in still more profound degrees of exhaustion. But it is already evident from these considerations that, in all these conditions, the symptoms are dependent primarily upon changes in the organic basis of the personality.

Definition of Neurasthenia. — A summing up of the conditions that furnish the clinical manifestations of melancholia would include those of neurasthenia and more. The study of melancholia, as has been said, is therefore instructive as revealing the import of the

[1] Delivered before the Massachusetts Medical Society, June 9, 1891.

[60] Wiener Med. Presse, June 6, 1889.
[61] Medicine Moderne, Feb. 5, 1891.
[62] Allgem. Zeitsch. f. Psych., xlvi. 487, 1889.

milder manifestations in neurasthenia. The common conditions of nervous weakness and irritability, and of the special weakening of the attention and mental depression, have been sufficiently noticed. But one other prominent condition should be taken into account in the definition of neurasthenia. The physical lassitude and languor, and motor weakness, pointed out by Brunton as suggesting curare-poisoning, has its counterpart also in the condition often observed in melancholia and characterized as mental stupor which it simulates. The definition of neurasthenia, properly extended to include the more prominent manifestations, both mental and physical, may be stated as *a morbid condition of the nervous system, the underlying characteristics being excessive weakness and irritability or languor, with mental depression.*

Cerebral Neurasthenia, and "Insistent and Fixed Ideas."— Cerebral neurasthenia being once established the general form is then usually developed; but the first may exist by itself, as has been shown, and be of long standing in a healthy organism. The same is probably true of spinal neurasthenia. This central affection is likely to involve, directly or indirectly, other co-ordinated mechanisms. An acute neurasthenia may be rapidly developed by mental shock or the like; it is as if, by a great discharge of energy, the brain cells are quickly brought to a state of exhaustion with inability to perform fully their function of taking up nutrition, or to act in their normal and habitual associations, because of being "thrown out of gear."

A unique form of cerebral neurasthenia may be brought about by the affections known as "insistent and fixed ideas." These are often started accidentally as uncorrected associations of ideas and feelings, and being at first purely disorders of ideation they become fixed by habit and intensified by accompanying emotions usually painful, and sometimes engender great worry and anxiety, because the patient is conscious of his inability to control his own mind against the ideas he knows to be absurd. The worry in these cases may cause a true cerebral neurasthenia. There is a special form of these "fears" that is the most likely to lead to a true melancholia in cases in which there is a strong body with a tired brain, — it is the fear of heredity, when based upon a fixed idea that may have some appearance of truth and cannot be corrected as being absurd. Then the worry is increased both by habit and fatigue. In general it should be said that "insistent and fixed ideas" are primarily accidental disorders of ideation, often occurring in the strong but more likely to happen to the weak. They are the cause of neurasthenia quite as often as they are a symptom of it. The morbid association being once formed, it becomes fixed by habit, inducing or increasing the cerebral fatigue, and constituting an association psychosis, or more properly an association psychoneurosis. When these affections are better understood, an explanation will probably be found for much that is now called hysteria, the neuromimesis, etc., including, in the insistent associations, other feelings than fears, that occupy the attention.

Secondary, Chronic, and Hereditary Neurasthenia. — The forms of neurasthenia so far discussed are those that are acquired, acute and primary. Secondary neurasthenia, or the form occurring after other definite diseases, often not nervous, must be regarded as belonging to the class having special toxic causes. The poisoning may be direct, and sometimes recurrent, as in the specific constitutional diseases, due to, or inducing, nutritional and degenerative disorders, such as gout, rheumatism, syphilis, etc. Or it may be indirectly due to such diseases as puerperal fever, typhoid fever, etc., in which it may be inferred that, although the toxic materials have passed away, a process of inanition once started persists, or continues to develop. Chronic neurasthenia has already been characterized, and includes conditions of partial recovery, in which a "constitutional predisposition" is fully acquired and established. This is consistent with periods of partial efficiency and comfort, with lessened reserve energy.

Hereditary neurasthenia, as a transmitted predisposition, is a usual cause of localized neurasthenia in special systems or organs. In these cases and in those with a general neuropathic condition, often inherited, there is a tendency to all forms and degrees of neurasthenic disorder, for the reason that, it being a condition of nervous instability and weak resistance, the organism yields to slighter degrees of stress than in ordinary states. The nervous equilibrium becoming unbalanced by slighter causes the departure from the general habitude of the individual is less, and restoration to it easier, than when the normal resistance is great and the break-down is a greater change. When a strong man breaks down it may therefore be more difficult for him to get well than for one less robust and stable. When there is such a predisposition, however, the prophylaxis should be more diligent against neurasthenia and mental disorders. It should be remembered also that in these neuropathic cases one may inherit a strong brain and a weak body, and *vice versa.*

Symptoms. — The symptoms of neurasthenia, being manifestations of weakness of the nervous system, proceed from variations from the normal condition of nerve-cells,— molecular and chemical, not yet demonstrably pathological, and implying a weakened or changed nutritional power. The vascular changes — the cerebral and spinal hyperæmias and anæmias — are due to disturbances of the inhibitory vaso-motor centres. As Dana says, "Neurasthenia is primarily cellular and secondarily vascular." Local anæmias may be initiated by an irritative blood-supply, — the vaso-motor constriction starting the deficiency of nutrition in the nervous centres; we may infer that this leads sometimes to hyperæmias, just as digitalis first stimulates the cardiac inhibition, and then by overstimulation and a toxic effect paralyzes it.

The fundamental and initial condition being thus a weakness of nerve-cells from excessive waste and deficient repair, to which there is a toxic addition to the "fatigue," then two types of symptoms must be recognized, — those characterized by a too quick response to stimulation, due to "irritability" or hyperæsthesia, and those due to a slowing or annulment of functional power, manifested by "languor," or even a complete suspension of function. These conditions of abated power, with "irritability" or "languor," occur in different degrees, and are common to the sensory, central and motor parts of the mechanism; they often affect one part more than the others, according to the localization of the "fatigue," or the kind of toxicity. The symptoms of neurasthenia are mainly *subjective.*

The *objective* symptoms may be first considered, by noting the common physical conditions. There is a general appearance of abated vigor, bodily weariness, languor and mental depression, and loss of weight.

There is not necessarily anæmia, but this is common in young persons and women; it is not present in many adults who may be physically well-nourished or plethoric. There may be tremor of the hands, sometimes only following muscular effort or mental excitement. Uneasiness, restlessness and excessive irritability are also common.

Loss of vaso-motor tone is indicated by cold hands and feet, and the temperature is often sub-normal in the more exhausted cases. Morbid blushing is common in nervous exhaustion in both sexes, from slight mental or physical causes. A characteristic form of the blushing is that which occurs in patches upon the neck and cheeks, of a bright color and with well-marked borders slowly spreading. This may appear with only the effort and interest of an ordinary conversation. The disturbances of the circulation are marked by cardiac palpitations, and the phenomena of an "irritable heart." The pulse shows frequent and rapid variations in arterial tension; it may be reduced in frequency with increase of tension, or be more frequent and weaker, and often quickly accelerated by exertion or slight emotional excitement.

Dilatation of the pupils is a common symptom, and may be due to paralysis of the third nerve or irritation of the sympathetic. These suggest nervous weakness, irritability and perhaps different toxic influences. A striking peculiarity is a quick and frequent alternation between this and contraction. The atonic voice is peculiarly significant, — it is faint and husky, and frequently varies in force. Sometimes it will suddenly change to a higher pitch and sound thin and weak. Respiration is not changed in frequency, but deficient respiratory expansion may be observed, with the symptoms of compensatory sighing and yawning.

The appetite is poor; there are disorders of gastric and intestinal digestion, gastric irritability with atonic dyspepsia, and constipation, sometimes alternating with nervous diarrhœa; and flatulence with feelings of distension; there is gastric neurasthenia, and a "torpid" or "neurasthenic" liver, and the important toxic consequences. Elimination generally is greatly at fault, by liver, kidneys and skin. The urine varies in specific gravity, being usually low in younger persons, with phosphates in excess. Older persons have more digestive and hepatic disorder, and a condensed urine with sometimes excess of phosphates, urates, and oxalates. Traces of albumen and casts are common in the depressed cases, as in melancholia. The peculiar symptoms of "uric-acidæmia" are so common in neurasthenic conditions that a careful study of this toxic element is likely to be profitable.

Neurasthenic irritability of the bladder and urethra occurs in both sexes; and in women the lowered nervous tone is manifested in menstrual disorders. While amenorrhœa occurs, particularly in the graver cases, as in melancholia, etc., it is often physiologically conservative; there may be an increase of the flow, and even the ordinary amount, in anæmic conditions, becomes relatively a hæmorrhage. Many such cases are kept indefinitely in a state of exhaustion by losing monthly all the upbuilding they can gain. Irregular menstruation and dysmenorrhœa are also common. Women in general suffer more than men from sensory and irritative symptoms, — there is more pain, headache, and neuralgia, and the complications of hysteria occur. The diseases peculiar to women may be either the causes or effects of neurasthenia. The symptoms of sexual functional disorders, generally, should always be first studied carefully, as probably expressions of a general neurasthenia. This is true also of the disorders peculiar to adolescence and the climacteric, — at the latter period of life men also are prone to neurasthenic troubles.

Insomnia has already been especially noticed as a symptom of irritability, — a cerebral over-excitation from local irritation, or that condition initiated by intensified interest and attention until the symptoms of "fatigue" supervene. Macfarlane defines insomnia as an evidence of vigilance in the cerebral cells, initiated and maintained by some perturbing element in the system, of which it may be the sole symptom.

The *subjective* symptoms are thus broadly characterized for convenience, as those of which the patient himself gives account. This division from the objective symptoms is open to criticism; the thesis of this discussion is, in part, to show that the inner conditions are largely revealed by mental symptoms which are obvious to the clinician who obeys Krafft-Ebing's injunction to pursue an untiring observation of the physical processes. While the patient may describe his feelings and tell his thoughts, in their subjective aspects, the clinical observer sees the plain and often contradictory significance of the patient's unwitting expressions of mental phenomena that are objectively manifested in his appearance and conduct. The physician, taking into account all the data, solves paradoxes and makes interpretations, that the patient cannot make of what he feels and seems to perceive. It is a part of the present purpose to make clear some of these apparently conflicting indications.

The study of the symptoms of neurasthenia means, then, the observation, and the careful analysis and discrimination, of the physical signs on the one hand, to differentiate them from the manifestations of more definite nervous diseases which are so often simulated in this disorder. We have, on the other hand, with these observations as guides, to discriminate in like manner the mental signs as expressed in the patient's appearance, conduct, and speech. The subjective symptoms are, therefore, of two kinds, — what the patient tells of his bodily sensations and mental feelings, and of his ideas of them, and what he manifests otherwise as expressions of his mental condition. The business of a physician is to make an interpretation of these phenomena, consistent with physical facts, and to give his patient treatment that is often as much of the mind as of the body.

The first and most obvious mental signs, taking the evidence from both of the sources just specified, are the characteristic depression of feeling, — lowering of emotional tone and a sense of ill-being. Coincident with these, but derived more from the patient's own statements, are a decrease of the power of voluntary attention, — attention becoming reflex, — and sometimes decrease of the power of memory in its elements of retention and recalling, and in the association of ideas. The first order of these symptoms represents, in the changes of emotional tone, etc., the concomitant changes in the organic personality, — the patient speaks despondingly and appears dejected, — he has "the blues." The second order shows, in the lessening of mental activity and inhibitory power, the abatement of cerebral energy, — the patient becomes conscious of this because of the increased sense of effort, and he may tell of it before it can be observed by

others. The sources and "mechanism" of these two orders of symptoms have been shown.

A third order of symptoms proceeds from the first two, as has been shown; it is somewhat later in appearance and marks a graver degree of nervous exhaustion. It includes introspection, or dwelling by attracted attention upon anxieties or painful ideas, intensified by the prevailing emotional tone, — retrospection, which is a constant and striking symptom in those who, from a sense of inadequacy, lose hope and therefore *interest* in the future, and find it in the reviewing of past experiences, errors or wrong doings, — and apprehension, as sometimes a feeling of hopelessness, or vague fear of inability to meet the requirements of the future or the consequences of the morbidly intensified memories of past misdeeds. These constitute the condition of worry and hypochondria.

All these orders of symptoms are usually present in slight degrees, and coincident at the very beginning of pathological fatigue. Their severity increases with decreasing energy, — from transient "fits of blues" to the most marked forms of the disease. When the condition continues, reasoning is likely to be soon influenced by the bias of morbid feeling, and the law of practice, habit and association comes in, tending to fix the morbid "habits of thought" as well as the disorder in the concomitant physiological processes. Then secondary effects begin to demand discrimination, and the force of habit must never be forgotten. For example, a business man, having become neurasthenic from over-work and worry, may attend to his affairs, with excess of application, and feel better doing so, through the effect of habit, and the stimulating effect of attention and interest as excitants of cerebral activity and a quickened circulation. Let him attempt, however, to turn his attention to other matters, as to rational recreation, and his loss of power to control his own mind betrays itself. At the beginning of the attempted relaxation, as in taking a vacation, there is more of mental effort, and of the depression of feeling, than in keeping on with his habitual occupations, though harmful. Or, again, such an experience as that described in a letter from a medical friend, who has had large success in treating neurasthenia, and who contributes unintentional testimony on this point, as follows: "I have been feeling so good-for-nothing and so blue that I have feared almost everything. These 'rheumatics' are not very comfortable companions, and the fear that they might get so bad as to prevent me from riding, has depressed me a good deal. I know that in other ways I am much better than a year ago, but in the past three weeks, when the letting up of work has come, there has also come a letting down of spirits. The work now is not more than one third of what I do when decently busy, but I get very tired when evening comes. I am all played out." It is altogether probable that had not his active season been terminated so soon by the summer vacations, he would have gone on with his work and postponed the onset of his "fatigue" and the return of his annual attack of sciatica, — but doubtless with more serious consequences at a later day.

These cases show the three orders of symptoms, and represent later stages of the conditions noted in the two examples of evening fatigue illustrating the genesis of pathological fatigue. They bear also a curious resemblance to another very common experience: — An occasion of severe mental labor, — perhaps of night-work and little sleep, — is followed by a day of excitable alertness of mind and body; there is a sense of nervous strain, but with an undue mental facility and physical irritability. But after the next night's rest a sense of fatigue, languor, and *malaise* may come — the second-day tire that leads to the inference of the elimination of an irritating stimulation revealing the real fatigue. In cases of neurasthenia, at more advanced stages, from long-standing or a more rapid development, the effects of habit upon the disordered physiological and mental activities become more pronounced. New symptoms also appear, due to greater changes in the nutritional processes, and particularly in the sensory mechanism.

The three orders of symptoms described refer to strictly mental phenomena and contain no mention of the irritability and languor common in this disease. These latter symptoms are both mental and physical, and they are direct manifestations of changes in bodily conditions. They now remain to be characterized as constituting a fourth order. We have, therefore, to examine further the subjective symptoms in respect to altered sensations. They include both those from the special senses and the largely predominating organic sensations. They may be distinguished as hyperæsthesia, paræsthesia, and anæsthesia.

Hyperæsthesia may be held to include all the phenomena of excessive irritability. It may be sensory or motor, or central and mental. General morbid sensitiveness is manifested by "nervousness" and restlessness; the patients, especially women, have a sense of "tension" and difficulty of self-control. There may be irritative and neurasthenic conditions of all the organs and minor mechanisms. The local hyperæsthesias are very many — as of touch, in which however there is no real increase of delicacy, but almost always a diminution. In many cases the commonly unperceived organic sensations are intensified. The sense of pain belongs to this group of "common sensations," and they include the neuralgias along with which there may be a duller perception of tactile impressions. Itching, burning, and other conditions bordering on pain, are included in this group of sensations that differ from the tactile sense.

Sensitiveness to ordinary stimuli in the organs of special sense, particularly of sight and hearing, is common. The visual troubles are not very serious, but there is always some weakness and increased irritability. Reading causes fatigue and pain and leads to headache; and there is sensitiveness to light. Muscular insufficiences occur. Visual memories are lessened. The hearing is over-sensitive in many cases, and the patient is very intolerant of slight noises. This may be due to the general mental irritability, and to expectant attention. These neurasthenic symptoms may be continued after recovery as the effects of mental habit. Hyperæsthesia may be regarded as the first degree of sensory disorder and weakening.

Paræsthesia, or perverted sensation, may be considered as representing a second degree of sensory disturbance and change from normal feeling, and may be general or local. Internally these disorders include giddiness, vertiginous sensations, a sense of muscular relaxation, etc. According to Gowers, the afferent impressions constantly passing to the cerebro-spinal centres, fail to affect consciousness under normal circumstances. But repeated attention may vastly increase the sensitiveness of the perceptive centres to

such impressions, and from such increase arise sensations of great discomfort, sometimes amounting to pain. In the case of an intelligent lady whose conscientious efforts to disregard her ills stamped the description as genuine, there was, at times, for many months, a feeling "like a stream of pounded glass running down the spine into the pelvic cavity." There may be perversions of the peripheral sensations, as pressure on the top of the head and of a band about it, a sense of expansion of the skull or as if it were empty. Feelings of flushing, both local and general, may occur, and numbness and coldness as alterations of the temperature sense, etc., in different parts of the body. This and the sense of pressure are to be distinguished as special functions, differing from tactile sense. Creeping sensations, tinglings and formication, are common among the paræsthesias.

Anæsthesia is the final degree of changed sensations, and may be partial or complete. For example, numbness of the hands and feet is not uncommon; and there are limited anæsthesias of the tactile sense in various parts of the body, or this being retained, there may be analgesia as simply the loss of the sense of pain. The lowering of sensory activity in general, or diminished sensitiveness, has been observed. This is common enough to demand recognition as one of the characteristics of neurasthenia along with "excessive irritability;" in both alike there is probably a toxic influence, or its secondary effects. There may be limited areas of anæsthesia or hemianæsthesia, particularly in hysterical conditions, although "hysteria is essentially a mental disease involving the emotional functions and the will."

The importance of these altered sensations is very great for their diagnostic value and as a guide to treatment in neurasthenia. Such disorders of the sensory apparatus of the special senses, as is well known, lead to the illusions and hallucinations, or disorders of sense-perception, in the graver degrees of the exhaustion of melancholia and mania. But the organic or common sensations are of fundamental importance, for, according to Ribot, "As the organism, so the personality." Taking the evidence of our bodily feelings, the sense of physical personality is the organized and co-ordinated sum of its elementary factors. Persisting alterations of organic sensations and aberrations of the physical personality, or as Bertrand calls them, "the hallucinations of the sense of the body." A man believes himself to be what he feels himself to be. He finds in the evidence furnished by the sum-total of his feelings the data for his judgments of himself. These sensorial alterations are doubtless expressions of more deeply seated disorder due to localized and limited derangements of the circulation. A limited central exhaustion and excitation may be accompanied peripherally by vascular irritability and disturbance.

The relation of these altered sensations to their mental effects has been considered, and something has been said of the converse effects of mental states, as to the emotional tone and attention, upon the physiological activities. The mutual influence of mind and body upon each other is of great importance here, as to the causation of the conditions manifested by these changes in the organic sensations. Mosso has demonstrated that hyperæmia of the brain is coincident with mental work. It is physiological that centres becoming inactive resume a normal and comparatively anæmic state. The removal of the excess of waste that attends activity being accomplished by due periods of rest, the centres recover their normal condition, and work may be resumed on awaking from sleep. With over-work of the brain, and prolonged and probably localized hyperæmias, the exhausted vaso-motor apparatus becomes unable to control the blood-supply; local and relatively chronic hyperæmia in the over-exercised centres may follow and become pathological. In this state work may be continued by voluntary effort, but there is sleeplessness, and breaking down of the general health. The exhausted and poisoned brain, and nervous system generally, afford only a defective innervation to the various organs of the body; and the characteristic symptoms of dyspepsia, constipation, palpitation, and the like, appear, with all their sequelæ of altered sensations.

Macfarlane[53] describes the symptoms of this condition of neurasthenia as tolerably uniform, — sleeplessness being one of the most urgent, usually associated with throbbing blood-vessels and restless cerebration, dreams connected with the daily work, and the sleep obtained being disturbed and unrefreshing. The element of worry has been shown to be a prime factor in all these neurasthenic conditions. It is especially noteworthy that Macfarlane mentions certain symptoms of present interest, — they are the most prominent signs of the earlier alterations of cœnesthesis so well studied by Ribot. The former says, "Exhaustion and misery are felt in the morning; depression, despondency and irritability during the day. All mental and physical work is accomplished with an effort, concentration of thought is difficult, and headache is seldom absent."

(To be continued.)

Original Articles.

PERSONAL OBSERVATIONS ON THE PATHOLOGY AND TREATMENT OF NEURALGIAS OF THE FIFTH PAIR.[1]

BY JAMES J. PUTNAM, M.D.

The subject of trigeminal neuralgia still presents, in spite of its enormous literature, many points of interest and uncertainty to the pathologist. What is the real cause of the pain? What gives the attacks their peculiar form, their tendency to recurrence, to abrupt disappearance and reappearance? What common factor can we find in the many modes of occasionally successful treatment? All these are questions which still press for an answer.

The main object of the present communication is to report the results of the microscopic examination of a number of nerves removed by the surgeons of the Massachusetts General Hospital,[2] and to indicate as far as possible the lines which I think we should follow in treatment. Before referring to my own observations, I wish to clear the ground a little by indicating the forms and the general conditions under which neuralgia of the fifth pair is liable to occur.

The nucleus of the fifth runs the entire length of the medulla and pons, and, with its descending root,

[1] Read before the Boston Society for Medical Improvement, March 23, 1891.

[2] In this connection I desire to express my thanks to Drs. J. C. Warren, M. H. Richardson, A. T. Cabot, John Homans and S. J. Mixter for their co-operation.

[53] Op. cit., pp. 78-82.

almost the entire length of the aqueduct of Silvius as well; and this doubtless indicates an enormous wealth of connections with other nerves, and a corresponding exposure to the morbid influences originating in disorders of distant parts of the body.

Of these so-called reflex neuralgias, so well described by Dana [3] and by Ross,[4] it is not my intention to speak at length, but only of those originating within the domain of the fifth nerve itself, and more especially of that form commonly known as tic douloureux or epileptiform neuralgia.

The exquisite sensibility of the face, lips and tongue indicates a high degree of excitability on the part of the central apparatus of the fifth pair; and it is doubtless this excitability — which when it becomes morbid we term irritability — that gives this peculiar character to the outbreaks of violent pain with which we associate the names of Fothergill and Trousseau. Lightning-like pains are, to be sure, met with in other forms of neuralgia to some degree, but they form the peculiar characteristic of the trigeminal neuralgias. The cases in which these occur are often set aside as forming a special group; but I think it is a truer expression of the facts to say that neuralgia of the fifth, especially of the two lower branches, when it becomes severe, almost always takes on this form, while in the lighter forms the pain may be duller and more continuous. It is not alone the cases of well-marked neuritis that are epileptiform in type. Instances are on record where the neuralgias set up by such general causes as shock or fright have been of this character. Gowers gives the case of a young lady which originated in this way; and I have known a similar form to come on immediately after a railway accident, in an adult man. As a rule, neuritis is present; and it probably exists far oftener than we think, and forms a partial or predisposing cause of the neuralgic outbreaks.

As regards the representation of the fifth nerve in the cerebral cortex, we know, so far as I am aware, nothing definite; but the interesting fact may be noted that in migraine, which, so far as the pain is concerned, is a neuralgia of the fifth nerve, many cerebral symptoms are present, largely visual in character, but including also aphasia, mental depression and the like.

Dr. Weir Mitchell has called attention to the fact, that instead of the simpler disorders of vision which are so common in migraine, hallucinations of analogous character may occur. It is true that the prevailing opinion refers the pain in migraine and headache not to the primary affection of the fifth pair, but to some distant irritation or to a disorder of the vasomotor system and the like. I desire, however, to call particular attention to the fact that one form of trigeminal neuralgia at least — that of the supra-orbital division — is closely related to migraine and the periodical headaches, and yet is often associated with neuritis.

The neuralgias of the ophthalmic division certainly show a distinctly different tendency from those of the second and third division.

I have already noted the fact that the so-called epileptiform neuralgia is more common with the latter nerves. It is occasionally seen in the supraorbital region, but much less often than in the lower part of the face. On the other hand, supraorbital neuralgia is usually so typically intermittent,[5] with distinct daily occurrences, that it used to be considered as malarial, and was called "brow ague"; and, in fact, it is still spoken of in that way by various writers, especially when it occurs in malarial districts. This notion is no doubt strengthened by the fact that this form of neuralgia almost invariably yields to large doses of quinine given three or four hours before the time of the expected attack.

I am glad to see, however, that Dr. Mitchell, in a recent paper, takes a decided stand against the supposed malarial origin of these neuralgias, which, for this neighborhood at least, where supraorbital neuralgias are sufficiently common, is certainly out of the question. Usually these intermittent headaches or neuralgias are immediately called out by catarrhal inflammation of the frontal sinus, to which the supraorbital nerve supplies sensory fibres; but they are by no means always provoked in that way, and even when so provoked it is probable that the sinus irritation acts by exciting a neurosis for which the nerve centres were already prepared. If this is the case, as I fully believe, it only shows the artificial character of the distinction which we try to draw between the so-called reflex neuralgias, and those due to irritation or inflammation of a peripheral nerve in the distribution of which the pain is felt.

Even in this case, where the pain is felt in the distribution of an inflamed nerve, and even though the neuritis or peripheral irritation is a *sine qua non* of the attack, the factor which gives the neuralgia its distinctive character is usually the special morbid condition and the constitutional and physiological peculiarities of the nerve centre, and so the neuralgia is, strictly speaking, "reflex." Conversely, I believe that every neuralgia, even if of "central" origin, or provoked by some distant cause, is liable to set up neuritis, provided the pain occurs often enough and lasts long enough in the same area; and that this is one of the many ways in which influences acting on the central nervous system, such as fright or other strong and painful emotions, or trauma, or general anæmia, join hands with influences directly setting up gross organic changes.

Supraorbital neuralgia, even if peripherally provoked, is often hereditary, is sometimes closely related to migraine, is liable to show itself from childhood on, and is said to have, with some persons, a tendency to recurrence in spring and autumn, the attacks lasting two or three weeks. The pain almost always appears each morning from seven to nine o'clock, and disappears about two, perhaps to return again in some degree in the evening. It is, now, noteworthy that this intermittent headache is liable to become complicated with a distinct neuritis of the supraorbital nerve. I know one such case intimately, where the neuritis produced trophic changes in the skin and the sub-cutaneous or periosteal tissues of the forehead. And yet this was one of the cases where the supraorbital neuralgia was hereditary, was associated with migraine attacks, occurring in the same patient and in others of his family, and had begun in childhood, when, to be sure, the neuralgia never occurred without being preceded by irritation in the frontal sinus. After a time, perhaps only after the

[3] Medical News, March 19, 1889.
[4] Brain, January, 1888.

[5] Compare Schweich (Wochenschrift für die ges. Heilkunde, 1848, xvi, 12) Mombert (Vierteljschrift für die Pract. Heilkunde, Prag. 1847, ii, 119) Seifert (Berliner klin. Wochenschrift, 1881, xviii, 148). The latter gives also references to other writers.

establishment of the neuritis, the outbreaks of pain became less markedly dependent on catarrh of the frontal sinus, and lost a little, though by no means the whole, of their periodic tendency, coming on after fatigue and from exposure to damp cold.

In this case, as in others of the same class, the eye of the same side became weaker, probably from slight neuritis of its motor nerves, so that, even after a number of years had passed without anything more than a trifling amount of neuralgia, it remained more liable to painful fatigue than its fellow.

An eminent French neurologist has told me that he had suffered some degree of permanent impairment of visual acuteness in one eye from the same cause.

An interesting series of observations has recently been published by Thoma,[6] in which he refers to the general fact that congestion, in general, is liable to lead to endartritis of the vessels involved, and records investigations of his own, showing that this seemed to occur over the affected area in a case of supraorbital neuralgia. In this way, perhaps, a neuritis might be set up or intensified.

The tendency to periodic recurrence, so characteristic of supraorbital neuralgia, is met with, to a less degree, among the other neuralgias, both of the face and elsewhere, especially, it is said, the traumatic neuralgias. I have no explanation to offer for it, beyond the suggestion that the recurrence of the "brow ague" in the morning may possibly be related to the reawakening of cerebral activity. Most persons who are subject to migraine are apt, I think, to wake with an attack.

The relationship between true migraine and supraorbital neuralgia is further shown by the fact that persons who suffer from the former disease are sometimes liable to have attacks of supraorbital and occipital neuralgia with marked tenderness of the affected area.

Before leaving this subject of the neurosal relationship between peripheral neuralgia of the fifth pair and the periodical headaches, I would note the fact that mental symptoms, by no means due solely to pain, may complicate the cases of pure neuralgia, forming an evidently "central" symptom. In one of the cases of supraorbital neuralgia above described, the attacks were sometimes preceded, but not necessarily accompanied, with a feeling of well-marked gloom, recalling pre-migrainous symptoms.

As regards the pathological anatomy of the neuralgias of the trigeminal, we know as yet, so far as I am aware, only the changes that occur in the nerve-trunks. It was a favorite theory with the late Dr. Austie, of London, — by whose zeal, intelligence, and industry we owe much enlightenment on the clinical sides of this subject, — that an atrophy of the ganglionic spinal nucleus was the real cause of the neuralgia. The hypothesis was unproved, and has generally been referred to only to restate that fact. The general tendency has been to regard neuralgia as one of the neuroses, but of late years, under the impulse of the increasing confidence in anatomical research, physicians have turned more and more away from the neurosal or, so to speak, central aspect of neuralgia, and have looked with more and more favor on the view that, in the chronic forms of neuralgia at least, the pain is simply the expression of the inflammation of a nerve.

There is much to be said on both sides of this controversy, but the recent discovery that the physiological activity of nerve-cells leaves its impress on the cell in the form of demonstrable changes in the size and shape of the nucleus, would, even without other evidence, make it nearly certain that sooner or later, actual changes of more or less gross character must take place in the central nervous system as a consequence of these repeated and violent storms of pain. Moreover, as a matter of fact, the hyper-irritability, or impaired storage power of the nerve-centres, is a condition with which we have always to reckon in the treatment of neuralgia. A neuritis, if present, may have to be got rid of before this morbid condition of the nerve-centre can be cured, but this is not always necessary, any more than it is always necessary to get rid of a uterine retroversion in the treatment of reflex nervous symptoms due to that cause. Indeed, nothing is more striking than the fact that a change in the hygienic surroundings of a patient, both moral and physical, may make all the difference of his reacting or not reacting to a peripheral irritation, and one of the most marked features in the history of the trigeminal neuralgias in particular is the occasional disappearance, spontaneous or under treatment, of a severe attack of pain, in spite of the persistence of its apparent peripheral cause. Such a disappearance of pain gives absolutely no warrant for the conclusion that neuritis, even of a high degree, is probably absent.

The anatomical changes in the nerve-trunks, in trigeminal neuralgia, are better known and more striking than those in the nerve-centres, and are sometimes recognizable even by the naked eye. Thus, in a case reported by Tuffier,[7] of neuralgia of the lower jaw in a man of eighty-four years, the nerve was found swelled and reddened, both within the dental canal and before its entrance, and histological examination of the teased nerve in osmic acid showed diseased and healthy fibres side by side. Gross changes of this kind have not been recognized in any of the specimens that I have examined, and, to judge from published accounts, they must be rare.

As regards histological changes, Dr. J. Ewing Mears,[8] of Philadelphia, has given the report, illustrated with drawings, of a careful microscopical examination by Schweinitz, of an inferior dental nerve, removed for neuralgia. All the changes characteristic of severe chronic neuritis were found, such as I have observed in most of my examinations. These changes involved both the nerve-tubes and the interstitial tissue, and were most marked at the peripheral end of the nerve. Besides this I know of no detailed histological statements, though I have not made an exhaustive search for them. There are, to be sure, a number of cases on record where the Gasserian ganglion, or the fifth nerve in its intracranial course, has been compressed by exostoses or inflammatory products or other morbid growths, but of these cases I will not speak.

In some cases the neuritis is of peripheral origin, excited by disease of the teeth, alveolar process, mucous membranes, etc. It is sometimes said that the teeth should not be blamed as the cause, because the neuralgia so often fails to cease upon their removal, but it is obvious that this conclusion is no more apt than it would be in the analogous case of neuralgia of the stump. In both cases there is a marked tendency of the neuritis to spread, and this may possibly be

[6] Deutsches Arch. für Klin. Med., 1888, vol. xliii, p. 409.

[7] France Médicale, Paris, 1881, xxviii, 672-675.

[8] Transactions American Surgical Association, Philadelphia, 1884, ii; also American Journal of the Medical Sciences.

given by the introduction of toxic substances within the sheath of the cut end of the nerve. At any rate it is certain that, in many cases, the neuritis does spread rapidly beyond the place of its origin and even involves other branches of the nerve.

In other cases the neuritis may be vascular in origin, arising from congestion, perhaps œdema, due to the attacks of pain as such, as suggested earlier in the paper and confirmed by the observations of Thoma.

It is certain that neuritis may be increased, if not actually set up, by the congestion attending an attack of pain — of neuralgia, as we ordinarily say. The suggestion of arteritis as an additional link between the two processes is a valuable one.

This is, I think, an important practical point, as it affords an explanation for a well-recognized clinical sequence. Take, for example, such a case as one reported by Derver,[9] where the irritation due to so minute a lesion as ulceration of the cornea was apparently the starting point of a trigeminal neuralgia which eventually required the removal of all three branches of the nerve. Is it possible that this result would have been, in a measure, obviated if the attacks of pain, with the resulting congestion, could have been prevented? It seems to me that there is a good deal to support this view, and that it indicates the importance of checking pain, not only for its own sake, or for the sake of relieving nervous fatigue or preventing the formation of a habit, but to guard against the strengthening of the vicious circle, of which neuritis is an important member.

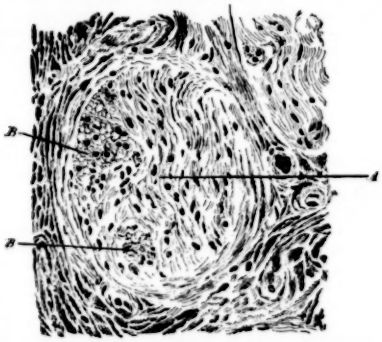


Fig. 1.

Conversion of a nerve bundle into nucleated, wavy connective tissue. At B the traces of nerve tubes remain, but they are very small, and apparently without axis cylinders or myaline.

I myself have examined ten nerves coming from eight patients, most of whom were operated on at the Massachusetts General Hospital. More or less marked changes were made out in all but three of these nerves, which seemed, at the points examined, to be substantially normal. The slighter changes, which seemed not to be incompatible with the integrity of the nerve-elements, consist in an infiltration of small nerve cells in the nerve sheath, around the vessels, and amongst the nerve fibres themselves, especially in the neighborhood of the sheath. Thickening of the endoneural septa and of the interfibrillary substance is also common. The most extreme changes consist in the conversion of the entire bundles into a mass of wavy connective tissue studded with nuclei and scarcely containing a single nerve fibre. This extreme change was present in only one case (Fig. 1).

[9] Albany Medical Annals, 1883, iv, p. 193.

I examined with especial care the perineural sheath and the blood-vessels, but, although I believe both to be the seat of morbid changes which are likely to be of considerable importance as affecting the nutrition of the nerve, I do not feel myself sufficiently familiar with normal conditions, especially in persons of advanced age, to give a positive opinion.

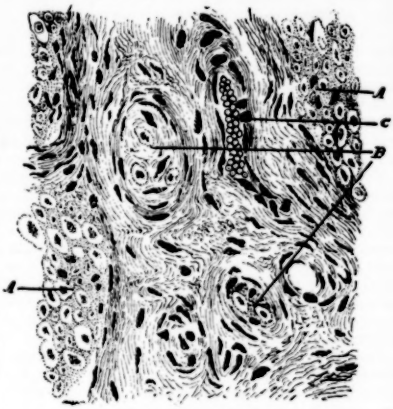


Fig. 2.

Thickened (?) septum between the fasciculi (A) of a nerve trunk. At B are small bundles of nerve-tubes, most of which seem to have been destroyed. The connective tissue contains many cells. At C is a blood vessel. This and the next drawing are on a larger scale than No. 4.

As regards the sheath, it may at least be said that in most of the cases it was very thick and richly nucleated and that it was relatively delicate in others, and, further, that in the latter the other morbid changes were generally less pronounced (Fig. 2).

(To be continued.)

OBSERVATIONS ON THE SUPPRESSION OF INFECTIOUS DISEASES.[1]

BY J. H. McCOLLOM, M.D., OF BOSTON.

(Concluded from No. 6, page 131.)

Another and still more important expedient for the suppression of these diseases is a careful medical supervision of the schools, not only for the purpose of ensuring good ventilation, but more particularly for the detection of mild cases.

There can be no doubt that many epidemics are caused by the presence of these mild cases in the schools. Chart B shows the total number of cases of diphtheria and scarlet fever, by months, for five years in Boston, comprising an aggregate of 11,794 cases, certainly a number from which reliable deductions can be made. It will be seen at a glance that the largest

[1] Read before the Massachusetts Association of Boards of Health at Newton, April 29, 1891.

number of cases occurred during the months of January, February, March, April, May, June, September, October, November and December, or during the time the schools were in session, while during July and August or in vacation time the cases diminish more than one-half. It is true that during the month of June there is quite a marked diminution; but this can be explained by the fact that at this time there is better ventilation in the school-rooms. It is very significant that during August with an average mean temperature of 68.02°, when the schools are closed the number of cases is 540, while in June, with an average mean temperature of 65.58°, there are 842, and also that in May, with an average mean temperature of 57.10°, the number of cases reaches 1,087, more than twice as many as are reported in August. As the difference in the mean temperature between June and August is only 2.44° being 65.58° in the former and 68.02° in the latter, it is not to be supposed that this slight difference can account for an increase of 300 cases, or in round numbers a fall of one degree in the temperature is responsible for an increase of 100 in the number of cases. If a low temperature has such a remarkable influence on the prevalence of these diseases as has been claimed by some, we ought, on general principles,

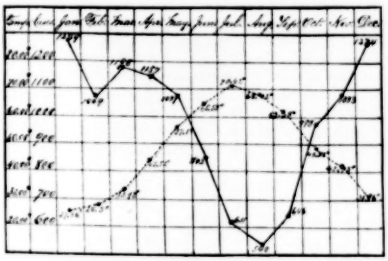


Chart B.

Cases of Diphtheria and Scarlatina, by Months for Five Years, with the Average Mean Temperature — 1886-90.

Temp. .... Cases —

to have instead of 1,289 cases in January, 4,000. Again, as is well-known, the schools open in Boston on the first Wednesday of September, and during this month the increase is 100 as compared with the number of cases in August; but there is a still greater increase from September to October, November and December. By following the broken line which indicates the average mean temperature, it is evident that the temperature has no direct influence on the number of cases. This certainly refutes the argument that the low temperature of the winter months is responsible for the increase in the number of cases.

The method adopted in Boston for the suppression of these diseases is: First, a report of the case by the physician in attendance; second, posting of a card on the house notifying the public of the existence of the disease; and in the case of diphtheria examination of the drainage; third, investigation of the case by one of the medical officers for the purpose of giving advice regarding isolation, and the importance of removal to hospital when the case occurs in a tenement-house; fourth, the sending a notice of the case to the school committee and also to the public library; fifth, the sending of a printed circular to the house of the patient, containing plain and explicit directions regarding isolation and the best methods of disinfection of the clothing and discharges of the patient; sixth, the visitation of the house by the disinfector, who leaves a postal card addressed to the Board of Health, on which is to be stated when, in the opinion of the attending physician, the premises will be ready for disinfection. In the case of a death as soon as the death certificate is received at the office of the Board of Health, arrangements are immediately made for disinfection. It is, of course, understood that public funerals in these cases are prohibited.

The method of disinfection adopted at present consists in the use of a solution of corrosive sublimate one part to five hundred for washing the wood-work of the apartment, and walls, if painted; in some instances of sponging the mattresses and carpets with a similar solution. The apartment in which the patient has been ill, is then tightly closed and four pounds of sulphur to every 1,000 cubic feet of space is burned in it. In addition to this there is an apparatus for the generation of a certain amount of steam, for it has been proved by many experiments that the disinfecting power of sulphurous acid is much increased by the presence of watery vapor. Without, at the present time, stating the arguments for and against the use of this substance as a disinfecting agent, it is sufficient to say, that during the past five years only two per cent. or 236 of the cases of scarlet fever and diphtheria of the 11,794 reported, could by any possibility be traced to infection from rooms or clothing that had been disinfected in the manner just described. So far as small-pox is concerned, in the 112 cases during the past ten years, where sulphurous acid gas has been the only disinfectant used, there is not a single instance of infection from an apartment in which there had been a previous case.

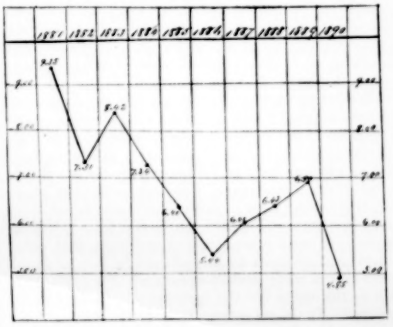


Chart C.

Percentage of Deaths from Croup, Diphtheria, Scarlatina and Variola to the Total Mortality for Ten Years — 1881-90.

A study of Chart C, which indicates the percentage of deaths from croup, diphtheria, scarlet fever and small-pox to the total mortality in Boston for ten years shows that in 1881 the percentage was 9.35; in 1882, it fell to 7.31; in 1883, it rose to 8.42; from

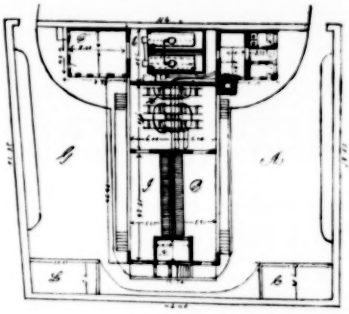
1884 to 1886 there was a gradual decline until the rate was 5.44; from 1886 to 1889, a somewhat exceptional period, in which these three diseases were quite prevalent throughout the whole country, the percentage gradually increased until it reached in 1889, 6.90; during the year 1890 it fell to 4.95; a diminution of nearly two per cent. in a year, and of nearly five per cent. in ten years. But it might be said by some that although the number of deaths from these diseases may have diminished, the number of deaths from other zymotic diseases has increased. The answer to this is the fact that in 1881 the percentage of deaths from all zymotic diseases was 26.67, and that the rate has gradually fallen to 16.47 in 1890; a diminution of nearly ten per cent. This certainly is a remarkable record, which cannot be explained by any of the so-called wave theories of disease and it proves, if it proves anything, the beneficial effect of sanitary regulations.

DISINFECTION.

The whole subject of disinfection has such an important bearing on the suppression of infectious diseases, that a few words regarding it may not be out of place at the present time. It is generally conceded that steam under pressure is the best disinfectant known. The arguments for and against sulphur dioxide, are so many and so convincing that one is left somewhat in doubt regarding this agent. Dr. L. H. Thoinot, an eminent hygienist of France, published a very interesting and instructive paper in the *Annales d'Hygiène Publique*, of October, 1890, on "Disinfection by Sulphur." After giving in detail the various arguments for and against the use of this substance he gave an account of a series of very carefully conducted experiments with the germs of septicæmia, malignant pustule, erysipelas, glanders, tubercle, typhoid fever, Asiatic cholera and diphtheria. He found that the germs of septicæmia, malignant pustule and erysipelas resisted absolutely the action of sulphurous acid, although it was used in large doses and with a prolonged exposure; while the microbes of glanders, tubercle, typhoid fever and diphtheria were absolutely destroyed. This observer in speaking of the use of sulphur as a disinfectant in variola says: "Former experiments, also, which have recently been criticised, teach us that sulphur is a good disinfectant for vaccine, and by analogy the conclusion has been reached that it is also an efficient disinfectant in variola. Its empirical use in epidemics of this disease has given satisfactory results. This writer recommends the use of sixty to seventy grams of sulphur to the cubic metre of space, a quantity somewhat larger than is generally used in this country, and twenty-four hours' exposure. Finally, this investigator gives as his opinion, based upon actual experiments, that disinfection by sulphurous acid should not be laid aside until we have a more perfect apparatus at our disposal, such as the stove for the generation of steam under pressure. In the meantime its scientific value should not be called in question, in certain cases; nor the signal service it can render in the time of an epidemic such as an epidemic of cholera where it can be easily and promptly instituted at slight expense, as a most efficient prophylactic agent.

Disinfection by a current of steam without pressure, which, until the year 1887, was used to such an extent on the Continent, is being gradually abandoned because of its unreliability and lack of penetrating power, and steam under pressure is being substituted. There are many different forms of the disinfecting stove, but the principle is the same in each. This consists in having an iron receiver capable of standing a pressure of thirty pounds to the square inch and in which the temperature can be raised to 250° F., an iron truck on which to place the articles to be disinfected, a pipe for the admission of steam and one for the escape, a pressure gauge, and a thermometer. In the system of Rohrbeck, there is a stage preliminary to that of disinfection which is said to increase the penetration, make the pressure uniform and causes even saturation. This is done by partially exhausting the air in the stove before admitting the steam. The time required for disinfection by steam under pressure is fifteen minutes for articles not specially contaminated. In the case of special infection an exposure of from thirty minutes to an hour is required.

The importance of a permanent disinfecting station in a large city cannot be overestimated. In Germany and also in France and in England, hygienic measures, of which this is a very important factor, receive a much more liberal support from the government than it is possible to obtain in this country. The disinfecting stations of Berlin, of Vienna and of Paris, are apt illustrations of this fact.



PLAN D.

The Disinfecting Station of Berlin.

Plan D[4] represents the public disinfecting station of Berlin, opened in the year 1886. This station occupies a lot of land about 126 feet deep, 149 feet wide at one end, and 137 at the other; a central building divides this plot into two nearly equal courts; one for the reception of articles to be disinfected; the other for the delivery of articles after disinfection; a narrow passage connects these two courts. In each court is a wagon-house about 16 feet by 32 for the reception of the disinfecting wagons. At one end of the central building is the boiler-house with two boilers; on one side of this is the coal-shed; on the other, bathrooms, water-closets and a place for the storage of chemicals. Immediately adjoining the boiler-house is the disinfecting apparatus, which consists of two rooms divided by a perfectly tight wall, and in which are the disinfecting stoves. Connected with the disinfecting chambers are two storage-rooms, each about 50 feet by 19; one for infected articles; the other for the disinfected. On

[4] Die Offentliche Gesundheits, und Krankenpflege der Stadt, Berlin. Berlin, 1890, p. 98, et seq.

the dividing wall are racks for articles disinfected or to be disinfected. At the end and between these two storage-rooms is the administration chamber, which can be entered only from the courts, and in which are two tightly closed windows having an outlook on the storage rooms. The disisfecting stoves, made by Schimmel & Co., are three double-walled, iron chests, each about eight feet high, five feet wide and nine feet long. Each stove has a manometer to indicate the degree of pressure. A, represents the court for infected articles; B, the storage-room; C, the wagon-shed; D, the water-closets and bathrooms; E, the boiler-house; F, the coal-shed; G, the court for disinfected articles; H, the disinfecting stoves; I, the storage-room for disinfected articles; K, the administration-room; L, the wagon-shed. The different parts of the station are connected by telephone. The utmost care is taken to prevent the contamination of disinfected articles either by the wagons or by the clothing of the disinfectors.

While the reliability of disinfection by steam cannot be disputed, it must be acknowledged that in certain conditions this process cannot be used, as, for example, in the disinfection of the walls of houses. For this purpose some gaseous disinfectant therefore is imperatively demanded. A painted wall can be disinfected by washing with a solution of corrosive sublimate, it is true, but for the cracked walls, covered with soiled paper, of the ordinary tenement-house, and for upholstered furniture, sulphurous acid seems to be the best agent to use; notwithstanding the fact that its disinfecting power has been disputed. Carefully conducted experiments prove, it is true, that when cultures of many microbes are placed on cloth and subjected to the fumes of sulphurous acid they are not sterilized; but the conditions are entirely different in the case of the microbes on the walls and floating in the air, for in the latter the germs are exposed directly to the action of the gas and are therefore more easily killed, while in the former, the fibre of the cloth protects them to a certain extent.

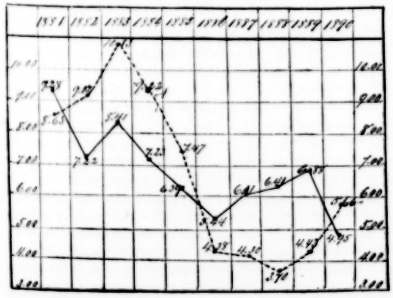


Chart E.

Percentage of Deaths from Croup, Diphtheria and Scarlatina to the Total Mortality in Berlin and Boston for Ten Years— Berlin .... 1881-90. Boston —

A study of Chart E, which shows the percentage of deaths from croup, diphtheria and scarlet fever to the total mortality for ten years 1881–90, indicates that in Boston, where sulphur is used, the rate has fallen from 9.28 to 4.95, a diminution of 4.33. In Berlin where the steam process is used, the rate has fallen from 8.63 to 5.66, a diminution of 2.97; 1.36 in favor of Boston. The municipal disinfecting station in Berlin, just described, was opened in 1886; for that year the rate was 4.38, and by following the broken line it will be seen that the percentage varied slightly during the subsequent years, but that in 1890, it reached 5.66, an increase of 1.28. In Boston, on the other hand, it will be seen by following the full line that in 1886 the rate was 5.44, and that in 1890, it was 4.95, a diminution of .49. It is of interest to note that the average percentage for ten years in Berlin is 6.76, and that in Boston it is 6.82. So far as the advantages to be gained from different methods of disinfection are concerned, the foregoing statistics show that the sulphur process, although it may be open to severe criticism, has been an important factor in causing a diminution in the number of cases of scarlet fever and diphtheria; and, on the other hand, that the steam process, although its scientific value cannot be denied, has not been such a potent agent for this purpose as might have been expected.

In conclusion, I would suggest the adoption of the following plan for the suppression of infectious diseases:

1. The prompt report of cases.
2. The removal to hospital of suitable cases, and the isolation of others.
3. The establishment of private hospitals, in which the patients can be under the care of their family physicians.
4. The posting of cards on houses where cases of disease exist.
5. The careful medical supervision of the public schools, not only for the purpose of detecting mild cases of disease; but also to prevent the return of children, who have been ill, until all danger of infection from them has passed.
6. The prohibition of public funerals.
7. The establishment of a disinfecting station and sanitary laundry.
8. The disinfection of the houses in which these diseases have occurred.
9. The establishment of a house of refuge for families during the disinfection of their homes.

In closing, let me add that I have no such Utopian ideas as to suppose, that even with the most elaborate system of disinfection; that with the most careful medical supervision of the schools; and that with the best arranged hospitals it will ever be possible to absolutely stamp out diphtheria and scarlet fever, but it is evident from the history of the course of these diseases, in Boston, during the past ten years, that a very considerable progress has been made towards their suppression.

Amateur Anatomists. — Not long since, says a medical contemporary, an officer died at a certain British military station. At an afternoon "at home" of one of the leading ladies on the station, the captain's death was mentioned, and the hostess who "knew all about it," volunteered the information that he had died of disease of the kidneys, adding with some unction and a little bashfulness, "how thankful we women ought to be that *we* have no kidneys."

RESECTION OF SECOND AND THIRD DIVISIONS OF FIFTH NERVE AT THE FORAMINA ROTUNDUM AND OVALE.[1]

BY S. J. MIXTER, M.D.
Visiting Surgeon, Carney Hospital; Surgeon to Out-Patients, Massachusetts General Hospital; Demonstrator of Anatomy, Harvard Medical School.

At a previous meeting of this Society, I reported three cases of resection of the third division of the fifth nerve at the foramen ovale. Since that time I have operated on two patients suffering from intense facial neuralgia, in both of whom the second as well as the third divisions being involved, I removed both nerves at their exit from the skull. I wish, in this paper, to call attention to the comparative ease with which both nerves may be reached through a single external incision, and also to speak of certain variations in the anatomy of the bony structures met with during the operation. Though these variations have been described by a few anatomists, I do not find them referred to by surgical writers; and without a knowledge of their existence, the operator might be greatly puzzled and hampered.

The method chosen for reaching the foramen ovale I have described elsewhere, and the incision through the origin of the temporal muscle and zygoma, given by Salger,[2] is the one that seems to me the best, after five operations on the living, and a large number of experiments on the cadaver.

The first step in the operation, namely, turning down the flap with temporal muscle, zygoma and pterygoids, is simple enough, though the hæmorrhage is always severe and only controlled by packing with sponges and compression with spatulæ. When the external pterygoid plate is reached, and the soft parts are pushed back with the finger or blunt instruments, the anatomical variation alluded to may be encountered, as happened in one of my cases. As a general rule, there is a considerable space — enough to admit the end of the index finger — between the posterior border of the external pterygoid plate and the spinous process. In looking up the anatomy of the operation on various dry skulls, I was struck by the great difference in this space in different individuals, and in a skull which I brought from Paris I found that there was actually a bony bridge from the plate to the spinous process. This bridge is found, according to Civinini, Grüber, Henle and others, in a certain number of skulls, (Grüber says one in fourteen), and is simply a bridge of bone instead of the more usual ligament (ligamentum pterygospinosum) which occupies this position. Hyrtl describes also a bony bridge forming the "porus crotaphiticobuccinatorius," through which pass the motor divisions of the inferior maxillary nerve. The variations in bony and ligamentous structure, and their relations to the nerve and its branches, are fully described by Von Brunn,[3] and a minute description of them is unnecessary here. In a report on the "Progress of Anatomy," by Dr. Dwight, recently published in this JOURNAL,[4] there is an account of these variations. It is sufficient for the surgeon to know that such ligaments always, and bony bridges sometimes, occur in this region, and that in one-third of the cases the main divisions of the nerve are divided by such structures.

If, then, on reaching the external pterygoid plate the space between it and the spinous process is very small, or they are connected by a bony bridge, it is necessary to use either a chisel and cut through the obstruction, or to break it away with a blunt instrument until the finger passes easily to the foramen ovale, which is recognized by touch.

This bony bridge I have seen six times in about 125 skulls examined. Three of these were in dry skulls, two were in the cadaver, and one in the living patient. In one cadaver the bony bridge separated the divisions of the nerve trunk; (lingual, inside; inferior dental, etc., outside) and in the other, observed by Dr. Dwight, in a girl sixteen years of age, the nerve trunk was on the outside. In my patient, I was unable to decide definitely the relation, on account of the bleeding, but I think that the bridge separated the inferior dental and lingual branches.

Having a patient with a severe neuralgia in the second as well as third divisions of the nerve, I made several dissections on the cadaver with the idea of reaching also the foramen rotundum through the external opening previously described. I found that by separating the attachment of the external pterygoid muscle from the external plate until the pterygo-maxillary fissure was reached, the internal maxillary artery was exposed and easily tied, and then, in most cases, the nerve could be drawn out with a blunt hook of proper shape, seized with strong hæmostatic forceps, and easily divided with a curved tenotome at the foramen rotundum. The whole contents of the sphenomaxillary fossa, is easily separated by a fine blunt instrument, and by means of the hæmostatic forceps the branches of the nerve are twisted out; by this method a considerable portion of every branch of the nerve, also Meckel's ganglion and its connections, are removed.

In some cases a very marked projection at the anterior end of the pterygoid ridge (tuberculum spinosum — McAllister) prevents easy access to the sphenomaxillary fossa, and it is necessary to remove it with the chisel. This may be done without danger, as it represents only a thickening of the bone at this point, and not a deepening of the middle fossa of the skull.

After having performed the above operation, my attention was called to a very similar one, the nerves being reached through an incision under the zygoma. This method does not seem as anatomatically correct as the one described, as there is greater danger of wounding the superior branches of the facial nerve, and the soft parts are divided at a point where their correct apposition after the operation is more difficult. The scar also is more prominent than in the temporal incision, of which all but a part of the anterior limb is covered by the hair. The temporal incision is not as direct perhaps, but it gives plenty of room for operating, and the nerve is as easily exposed as by the other operations.

The earlier methods of reaching the foramen ovale I have not described, as I see no reason why any one who has sufficient anatomical and surgical skill to do the operation, should divide the lower jaw at any point, when it can be reached without. The operation is a somewhat tedious one, as much of the hæmorrhage has to be stopped by pressure, and sometimes the bleeding is very profuse.

The paralysis and contraction of the muscles of mastication, described as following excision of the third

[1] Remarks made at the meeting of the Boston Society for Medical Improvement, March 23, 1891.
[2] Wien. med. Woch., 1887, xxxvii, 461.
[3] Anat. Anzeiger, 1891, vi, 967.
[4] Vol. cxxiv, p. 555.

division, has caused little discomfort in the cases I have operated upon. The jaws should be opened widely every day after the first week, and wedges used by the patient, if necessary. The very slight stiffness is a small matter to the patient, when compared to his previous intense pain.

As regards the methods of reaching the foramen rotundum and Meckel's ganglion, by trephining the antrum, or resecting the upper jaw (osteoplastic), I can see no reason why they should be chosen in preference to the operation described, even though the neuralgia is limited to the second division. The removal of the nerve in the orbit certainly cannot reach the posterior dental branches, which so often seem to be the first ones affected by the disease.

An operation still more radical than resection of the nerve trunks at the base of the skull has been performed — resection of the Gasserian ganglion.[5] In none of my cases has the supraorbital branch been involved; and as there is apparently danger of ulceration of the cornea and loss of the eye from removal of the ganglion, I have considered it best not to undertake it.

The following cases were seen by Dr. J. J. Putnam, who advised resection of both the second and third divisions, as both were involved. These cases, added to those previously reported, make six in which I have resected the third division at the foramen ovale.

Case I. Patient of Dr. Sylvester, Natick; man; age sixty-seven; severe facial neuralgia for five years. When first seen it was very severe, the most painful points being on the temple (auricula-temporal) and near the nose on the cheek (infraorbital). He was absolutely unable to work for three years.

The temporal incision was made, and on reaching the external pterygoid plate, the bony bridge (pterygo-spinosum) was found, which was broken through, together with a portion of the pterygoid plate. The nerve was divided at the foramen ovale, and the distal end twisted out. After tying the internal maxillary artery, the "tuberculum spinosum" was chiselled off, and the trunk of the superior maxillary nerve raised with a blunt hook. The contents of the spheno-maxillary fossa were then freed from the bone, an opening being accidentally made into the posterior nares through which air bubbled as he breathed. The distal end of the nerve trunk was forcibly twisted out, as were any filaments remaining in the fossa.

The wound required no packing after the operation, and on the removal of the dressing, in a week, was found entirely healed. (Patient was shown at the meeting, four weeks after the operation. Now, three months after operation, there is no pain, and he is able to work.)

Case II. Kindly referred to me for operation by Dr. Homans, at the Massachusetts General Hospital. Man; sixty-two; more or less pain for years, but very severe for a year. When first seen had most severe form of epileptiform neuralgia over the area supplied by the second and third divisions. This operation was much like the previous one, except that there was no "tuberculum spinosum" to be removed, the nasal cavity was not opened, and the foramen pterygo-spinosum was not present, though the pterygoid plate projected so far backward that its posterior edge had to be cut away. There was considerable hæmorrhage, and iodoform gauze was packed in the bottom of the wound. The gauze was removed in forty-eight hours. No suppuration. There was absolutely no pain from the time of operation until the patient's discharge from the hospital. I think that nothing more favorable can be said of so severe an operation than the statement of the patient, that he "would rather go through the operation any time than have the old pain for twenty-four hours."

Case III.[5] German, male, age sixty-four. Severe epileptiform neuralgia of second division; slight neuralgia of third division. Referred to me for operation by Dr. C. J. Blake. Operation as in last two cases. Hæmorrhage severe; wound, packed with iodoform gauze. Recovery rapid, and relief from pain immediate and complete. In this case there was some pain and roaring in ear on side operated upon, which on examination by Dr. Blake was found to be due to hæmorrhage into membrana tympani. This symptom was present in one other case, and, as in this, was transient.

(August 10th. I have examined two of the above cases within a few days; and in both there is no pain. Case I is able to work regularly, which he has not done before for years.)

[5] Rose: Lancet, 1890, ii, 914.

OTALGIA.[1]

BY CLARENCE J. BLAKE, M. D., BOSTON.

The original use by earlier writers, (Itard and Bonafort, for instance) of the term Otalgia, as meaning pain in and about the ear, of either inflammatory or the less understood reflex origin, has, with the better definition of causes, gradually given place to more limited uses, until in its later definition and with the enlargement of our nomenclature, it means neuralgia of the ear itself, or "pain in the course and over the distribution of a nerve in the ear without fever."

In this sense neuralgia of the ear is, even with the broader definition of Roosa, an extremely rare disease, and is usually of general or immediate reflex origin, varies both as to time and degree in its manifestations, and is therefore frequently simulative, and can be differentiated from the pain due to a local inflammatory process often only by the most searching examination.

Of the neuralgias in and about the ear so completely defined by Dr. Green in his paper before the American Otological Society, 1874, the term otalgia would, most exclusively considered, include only neuralgia of the auricle, and external auditory canal, and of the middle ear, the correlative nerve supply of these parts being such as to afford ample opportunity for pain of purely reflex origin without reference to the possible causative trophic changes in the tissues of the ear itself, first adequately described by Dr. Green in the paper mentioned, and which should not be included here if we wish to keep to the more precise definition. This nerve supply includes, for the outer ear, nerves derived from the third cervical, the trigeminus and pneumogastric, and, for the middle ear, trigeminus, facial, glosso-pharyngeal, pneumogastric and great sympathetic, and in addition the tympanic plexus.

In the neuralgias both of the external and middle ear the pain may be divided into two classes, the persist-

[1] Read before the Boston Society for Medical Improvement, March 23, 1891.

[5] Operated upon after this paper was read.

ent and intermittent. The former class, in the external ear, includes the cases of hyperæsthesia usually associated with such disturbance of the general nervous system as may be found in neurasthenics, and as he has been seen in some instances associated with hysterical hemianæsthesia and provoked locally by temperature changes, especially by exposure to cold. This constant pain, exaggerated by the conditions last mentioned, is most commonly confined to the external auditory canal and the upper anterior portion of the concha, varies with the general conditions of the patient, increases with fatigue or other generally debilitating conditions, is relieved temporarily by protection of the parts, and disappears finally with the improvement in the general condition.

An illustrative case of this kind occurred in a slender woman, thirty years of age, the childless wife of a country clergyman of moderate means. She had no organic disease, had never been strong, however, was much given to home life and intellectual pursuits, and quickly paid the penalty in nervous over-tire and disturbance of digestion for any nervous over-strain entailing hurry or loss of sleep. Under these conditions she had coldness of the extremities (especially at night,) exaggerated knee-jerk, pain in the small of the back, insomnic tendency, and a continued pain referred principally to the region of the outer half of the external auditory canal and the bottom of the concha. This pain was more marked in her right ear than in her left, interfered with sleep unless soothed by applications of warmth, and sometimes disappeared only under the administration of an opiate. On the following day the pain would be less, but still constant, aggravated by exposure to a draught of air but not by light pressure, and, as before, relievable by protection. The ordinary means to this end were finally assisted in this case by painting the sensitive surface with a sixty-grain solution of nitrate of silver, the resultant coating seeming to have a sufficiently protective effect. The internal administration of quinine, both in the small and continuous and in the larger occasional dose, seemed to have no beneficial effect. The hearing in both ears was normal, there were no evidences of acute or hypertrophic inflammation and the neuralgia finally disappeared under general hygienic treatment, including rest, food, massage and tonics.

This case will serve to illustrate the otalgia continuous in character, of general reflex origin, the persistence of which soon begets apparently a hyperæsthesia of the adjoining parts, often so painful that the patient is unable to sleep on the affected side without an ear pillow, and sometimes, though rarely, associated with a hyperæsthesia acoustica most marked for high tones.

The following case may be cited in illustration of the continued pain of determinable reflex origin:

A woman of forty-five, of good habits and fair general health, but occasionally the subject of hemicrania after fatigue, was suddenly seized, late in the day, with pain gradually increasing in severity, continuous in character, referred to the depth of the left ear. An examination of the ear showed the external ear normal, without tenderness on pressure. The membrana tympani and middle ear to all appearances normal, and the hearing good. Examination of the jaw, however, showed a cavity left by the recent extraction of a lower bicuspid, which cavity was filled with the detritus of food and other material. The syringing out of this cavity, followed by the application of a few drops of a four-per-cent. solution of cocaine, relieved the pain within a few minutes. It did not subsequently return.

The intermittent form of otalgia externa is, so far as I am aware, more common in the auricle and the posterior portion of the canal, rarely occurs independently of other neuralgic manifestations, and is, together with the neuralgia of the helix, more frequent in connection with the fugitive neuralgias of the occipito-parietal region than alone. The same may be said of the intermittent neuralgic pain of the middle ear, seldom felt in the middle ear only, generally conjoined with pain referred to the canal, so that it is sometimes difficult to get from the patient a correct definition of the most painful part.

The *continuous* pain of the middle ear, however distinctly reflex in its origin, the true otalgia media, is generally referred to the depth of the ear; occurs often independently of other neuralgic symptoms, though usually in a patient having neuralgic history; and finds its origin more frequently perhaps from the irritating cause of carious teeth than from any other form of the reflex suggestion, though this type of neuralgia has been observed in connection with diseases of, and after operations on, the nose, from irritation in the naso-pharynx at the mouth of the Eustachian tubes (J. Orne Green), and from exciting causes in the larynx (Langmaid).

Of the typical otalgia, certain points present themselves as important from the stand-point of differential diagnosis. The otalgia proper, for instance, rarely occurs in young children, frequently (comparatively speaking) in adults. A reflex cause which is apparently sufficient in a child to cause tissue changes evidences itself in the adult only in a pain which, if long continued may be, it is true, ultimately associated with tissue changes as well.

The intermittent otalgia is rarely found alone, but is almost always associated with other neuralgic symptoms, which help to differentiate the pain in the ear from a pain having a local inflammatory though concealed cause; it is, therefore, the continued otalgia which should especially call for that care in objective examination of the ear in addition to careful tests and attention to the general history demanded by all of these, cases from the practitioner who would avoid the mistake of cloaking with an anodyne a pain which is really evidence of a serious inflammatory process demanding surgical interference for its relief.

The Albany *Medical Annals* collects the following from "The Annual Report on Laws Regulating Medical Practice," by Dr. R. J. Dunglison. The answers were given to the questions of a State Board of Medical Examiners:

"Extra-uterine pregnancy may be a fungoid groth or tumor fibroid in its character, or any extra groth in the utrous would be called extra-uterine pregnancy.

"A breech presentation may be known by the sense of touch, the buttox being different in formation from the cranium. The anus is different from the mouth, absence of tongue and nose. Get your finger in the inguinal reagion soon as possible and assist your patient by ferm but gental tention.

"The temperature of the system is variable. In health the cuticle stands at 70 degrees."

Medical Progress.

RECENT PROGRESS IN FOOD, DRUGS AND ARTICLES OF DOMESTIC USE.

BY BENNETT F. DAVENPORT, M.D.

POLLUTION IN AIR OF LARGE MANUFACTURING CITY.[1]

A committee of the Naturalists' Society of Manchester has reported that they found snow carried to the ground large quantities of sulphuric and hydrochloric acids, and also some of the elements of sewage. They found the deposition upon vegetation was in direct proportion to the population, and the most injurious were due to the emanations from dwelling-houses. They estimated that in one day in Manchester two tons of "blacks" and three hundred-weight of sulphuric acid were deposited upon each square mile of the city area. The Royal Horticultural Society has appointed a committee to make similar investigations in London.

HEAT OF COMBUSTION OF THE COMMONER ILLUMINANTS, AND THE CONTAMINATION OF THE AIR CAUSED BY THEIR USE.[2]

THE substances examined by the author consisted of candles (made of tallow, paraffin and stearin), petroleum oil, and gas. The tallow candles were moulded, the paraffin were the standard German candles, and the gas was from the public supply of Marburg, which is of the average quality. Both the petroleum and gas were burnt so as to produce a light of about one hundred candle power.

Substance.	Amount burnt.	CO_2 produced	Water vapor.	Heat units.
Gas: Siemen's regenerative lamp	0.35 cb.m.	0.386 kilos.	0.304 kilos.	1843
Gas: Argand burner	0.80 "	0.882 "	0.694 "	4213
Petroleum: Flat burner (3 hours)	0.60 kilos.	1.648 "	0.653 "	6220
Petroleum: Flat burner (8 hours)		1.876 "	0.762 "	
Petroleum: Large round burner (3 hours)	0.20 "	0.549 "	0.218 "	2073
Petroleum: Large round burner (8 hours)		0.625 "	0.254 "	
Paraffin	0.77 "	2.298 "	0.911 "	7615
Stearin	0.92 "	2.443 "	0.936 "	7881
Tallow	1.00 "	2.681 "	0.941 "	8111

Upon burning one gramme of the several materials, the following results were obtained:

Substance.	Weight of Carbon.			Relative amounts.	
	By analysis	Waste gases as CO_2.	Partially burnt.	As CO_2.	Partially burnt.
Gas	0.663	0.647	0.016	100	320
Tallow	0.740	0.730	0.010	113	200
Stearin	0.763	0.726	0.037	112	740
Paraffin	0.839	0.821	0.018	127	360
Petroleum, 3 hrs.	0.858	0.751	0.107	116	2140
Petroleum, 8 to 13 hrs.	0.858	0.853	0.005	132	100

This, for a light of 100 candles, would become:

Siemen's burner	0.39 cb. m. CO_2.
Argand burner	0.88 " "
Petroleum, small and flat flame	1.65 " "
Petroleum, with large and round flame	0.55 " "
Candles	2.3 to 2.7 " "

[1] Industries, x, 1891, p. 91.
[2] E. Cramer: Jour. f. Gasbeleuchtung, 34, pp. 27, 48, 65.

The amount of hydrogen incompletely burnt was as follows:

Substance.	Weight of Hydrogen.			Relative amount partially burnt.
	By analysis	Waste gases as H_2O.	Partially burnt.	
Tallow	0.118	0.108	0.010	100
Stearin	0.124	0.113	0.011	110
Paraffin	0.152	0.135	0.017	170
Petroleum, 3 hrs.	0.138	0.121	0.017	170
Petroleum, 8 hrs.	0.138	0.141	+(0.003)	—
Gas	0.256	0.207	0.049	490

The products of the incomplete combustion of the hydrogen and carbon include carbonic oxide, nitrous and nitric, sulphurous and sulphuric acids. Experiments made with healthy guinea-pigs showed that they were able to breathe the air contaminated with the products of combustion of gas or candles, for days at a time, without permanent injury to their health; while men, the nose so quickly detecting the fumes, could not breathe air containing these substances in quantities far below the danger limit without great inconvenience.

COTTON GOODS CONTAINING ARSENIC.[3]

The British consul-general at Christiania reports that the imported textile goods, the sale of which had been prohibited in Norway during the year, on account of the presence of an excess of arsenic, consisted almost exclusively of British cotton prints. Of the samples examined, eleven per cent., against twenty-four per cent. in the year before, had exceeded the limit. The principal colors were blue and white, brown and white, black and white, and red with yellow.

In Norway there is thought to be special danger to children and persons in weak health from the use of textiles excessively colored with arsenical dyes, particularly from bed clothes.

ARSENIC IN COMMERCIAL ACIDS.[4]

Buchner reports that in 100 kilogrammes of English oil of vitriol and in muriatic acids he found 131 and 592 grammes of arsenious acid. As these acids are at the base of about all chemical products, the presence of traces of arsenic in such product is not very surprising.

VEGETABLE BUTTER.[5]

The manufacture of a vegetable butter from cocoanut oil has become a large business in France and Germany. The product obtained after Dr. Schlink's method is a perfectly white mass, of the consistency of butter, and of a sweet, neutral, agreeable flavor, melting at 25° C., and remarkably free from any tendency to turn rancid. It contains 99.63 per cent. of fatty matter.

Ordinary cows'-milk butter contains about seven per cent. of butyric, caproic, capric, caprilic acids, etc. In margarine these soluble acids exist only in traces,

[3] Board of Trade Journal, January, 1891, p. 33.
[4] G. Buchner: Chem. Zeitung, xv, p. 43.
[5] F. Jean: Monit. Scient., 1890, xxxvi, 1116-19.

while this vegetable butter contains them in about the same amount as milk butter. It does not mix easily with milk butter, and such a mixture when saponified with an alcoholic solution of potash, and then made acid with sulphuric acid, will give out the very characteristic odor of cocinic ether. Even ten per cent. of it in such a mixture will yield the acrid flavor and disagreeable taste of rancid cocoanut. The Reichert-Meissl-Wollny method of examination serves to detect fraudulent admixtures. As also it melts at some 10° C. below milk butter, its presence would be thus indicated.

CHINA TEAS.[6]

The author has undertaken to determine if there was any relation between the commercial prices of different teas and the amount of theine and tannin which they contained.

He reports a detailed table of his results and concludes that the prices do not depend upon the absolute amount of theine in the teas, but upon the relative percentage of theine to the total amount of tannin and products of fermentation. The greater this ratio the higher the price of the tea, and the more regular the fermentation the better the tea. He found the ratio of the theine to the other constituents ranged from 16 to 74 in the lower price teas, to 24.5 to 75.5 in the higher price and best teas.

THE CHEMISTRY OF WHISKEY AND ALLIED PRODUCTS.[7]

Brandy, an evident corruption of "Brannt-wein," that is, "burnt" or "distilled wine," is most properly applied to the spirit obtained by distillation from fermented grape sugar, either in the juice itself or that retained in the skin after their pressing. Of late years, however, it has become corrupted from its original and proper meaning, and has become so extended as to include spirit distilled from maize, rice and other cereals, and also from potatoes, turnips, beet roots, molasses, etc.

The *Berliner Börsen Zeitung* asks: "What do they understand by the word 'Cognac' in France?" and says: "The district of Charente is the place of origin of real 'Cognac,' and has, during the last seven years, produced an annual average of 20,000 hectolitres, while the annual export by France of liquor known as 'Cognac' has exceeded seven times this quantity. In trade, we usually understand by 'Cognac,' a brandy obtained by the distillation of wine, and which was formerly known as Franzbranntwein, that is, 'French brandy,' but it has been shown by analysts, and also in a bulky volume issued by the State Department of Hygiene, that there is no reliable means of distinguishing real brandy as distilled from wine from the spurious stuff. It will, nevertheless, be interesting to those in the trade to learn of a French court of law as to what it understands by the word 'Cognac.' A merchant who bought brandy in Valenciennes and labelled it 'Cognac,' was prosecuted for so doing, but was acquitted on the ground that the word 'Cognac' is not to be exclusively understood as descriptive of the place of production, but often, as in the present instance, as descriptive of the nature of the product. According to this decision, it is, then, to be regarded as sufficient when labels announce the nature of goods to which they are affixed, and it is not requisite that the contents of a bottle should have been produced in the place mentioned on the label. This fundamental decision is, however, not consistent with sentences pronounced by various French law courts upon manufacturers of sparkling wines, who have been heavily fined for introducing into trade wines which they described as 'champagne,' and which had undergone a similar process to that of the genuine article, but had not been made from wine grown in the champagne district."

It is well known that ethyl alcohol and carbonic acid are by no means the sole products of fermentation by yeast. Succinic acid and glycerine are constant products, and also the higher homologues of ethyl alcohol in small but distinct amounts. The species of ferment, acting, changes the result. Thus, ordinary brewer's yeast, saccharomyces cerevisiæ, produces subsidiary products distinctly different from those of the ferment of grape skins, saccharomyces ellipsoides. In fact it has been found that by adding the latter ferment to molasses and other saccharine liquids distinct from grape-juice, the products of the fermentation after distillation has all the character of Cognac brandy.

Many attempts have been made to estimate the fusel oil in spirits, but accuracy has been found to be by no means easy to attain. It was probably in great measure the result of omitting certain important precautions which led Sir James Bell, the chief chemist of the Inland Revenue Department, to assert, before a committee of the House of Commons, upon British and Foreign Spirits, that the proportion of amylic alcohol was somewhat greater in matured spirits than in new. This anomalous conclusion is so opposed to chemical expectation and common experience that it is important to know that the methods of analysis upon which it was based are open to exception.

The exact cause of the improvement in spirits by maturing in casks, is by no means clearly made out. It is usually ascribed to oxidation and the formation of ethers, which certainly does occur, but it is doubtful if the improvement in flavor is due as much to this cause as to the change in more undefined constituents. One thing seems to be quite certain, and that is, that the proportion of amylic alcohol, and even fusel oil in the widest sense, present in whiskey, either new or old, is very trifling, and it is difficult to understand that it is capable of producing the injurious physiological effect attributed to it.

With a view of ascertaining whether it did me any harm, I have, for some time past, been taking every evening when at home, some whiskey to which two per cent., of fusel oil had been added, and yet I have not had even a headache from it. My friends say that it is because I have not taken enough of it. It is extremely nauseous, but it leaves no doubt in my mind that the effects of amylic alcohol, or whatever other substances there may be in fusel oil, have been absurdly exaggerated. I believe the whole theory was trumped up by some alchemist about the year 1, and yet people have gone on making these statements while there was not a single figure or accurately observed fact to support them.

I have no doubt the amylic alcohol and other subsidiary constituents of spirituous liquids are of great importance with respect to the flavor and bouquet, but I have grave doubts of their physiological importance. It is worth remembering that taking the whole oxidizable substances present in whiskey and calling them amylic alcohol, there is not more than one-tenth of one

[6] P. Dvorkovitz: Jour. Russ. Chem. Soc., xxii, p. 558.
[7] A. H. Allen: Jour. Soc. Chem. Industry, 1891, p. 305.

per cent., or say a drop in a wine glass, and hence any local effects, such as have been attributed to fusel oil, are more probably due to the ordinary ethyl alcohol than the minute quantity of amylic alcohol contained in it, whatever may be the case as to the effect on the system.

In the discussion which followed the reading of the paper, J. A. Wanklyn said that, for fifteen or twenty years he had been of the opinion that amylic alcohol had nothing to do with the injurious effects of whiskey. He had long thought such effects were due to some exceedingly powerful essential oils. W. C. Samuel reported that he had also personally experimented for a month with a spirit to which various percentages of fusel oil had been added, and had found no ill effect to result, except the nauseousness. Dr. W. S. Squire said that in the manufacture of whiskey there was practically no attempt at purification. It was certain that the spirit improved if stored in wood but not if in glass. He thought the aldehyde probably the only constituent which would oxidize, and from its great volatility would be the first body to escape by evaporation. The fusel oil he did not think diminished in the process of maturing, but the other more volatile bodies disappeared to a large extent. One cause of the improvement by ageing was the practice of storing whiskey in sherry casks. If, however, this cask had already been once used for this purpose, the second lot of whiskey would not improve in the same degree as the first had, while if new casks were used the improvement was still less. He felt no doubt that if the more volatile products which came from the top of the still were not returned into the distillation, the maturing of the spirit would take much less time than at present. Yet distillers were extremely conservative, and objected to all change. In a large Dublin distillery where a man was killed by the breaking of a rope used in hoisting up the grain, the distiller had objected to the use of a chain, as recommended by the jury, on the ground that any change in the method of working would spoil his whiskey. Mr. F. H. P. Coats reported that it had been shown that if grape skins were sterilized so as to destroy the common organisms, and then were inoculated with a growth from the grape used for the manufacture of special highly-flavored wines, the effect was that the bouquet and flavor of the common wine were indistinguishable from those of the high-priced wines made from the special grapes. It would, therefore, appear that less importance attached to the material from which the beverage was made, than to the cultivation of those special ferments which would impart to it any flavor which might be desired.

ACIDITY OF MILK.[8]

After determining the acidity of four to five hundred samples of milk, he reports that as delivered to the London trade it has an average acidity equal to .20 per cent. of lactic acid; that this will usually develop within eight hours of the milking. In England, within thirty to forty hours later, the acidity will rise to .35 or .40 per cent., at which point it acquires an acid taste, and is said to be sour.

Usually at an acidity of .60 to .70 per cent. it curdles. Even if kept for a long period it rarely developed a greater quantity of lactic acid than two per cent. The highest acidity found after 117 days of keeping was 2.34 per cent. The reason of this is, that when this amount of acidity is reached the acid found is destructive to the fungus forming it. Milk, which has not yet developed an acidity of quite .30 per cent., will yet coagulate on boiling. This is, therefore, the customary method of the trade for testing the freshness of a milk. Milk which had been boiled kept sweet twenty hours longer than the unboiled. Boiling was as efficacious as the use of one part per one thousand of any of the preservatives used in the milk trade. Of these he found boracic acid was the best, two parts of which to the one thousand of milk would keep it fresh for forty-two hours longer. Whatever was used, he found that it had an acid taste on reaching an acidity of .50 per cent.

[8] A. W. Stokes: The Analyst, 1891, p. 122.

COAL-TAR COLORS.[9]

In foods and articles of domestic use the following yellow colors have been found to be perfectly harmless, or very nearly so, when pure: Naphthol-yellow S, Fast-yellow R, Brilliant-yellow, Orange I, Bismark-brown, Sudan I, Pouceau 4. G. B., Chrysoidin, Diphenylamin-orange, Azarin, Fast-brown, Chrysamin R, and Dimethylamidoazobenzol or Butter-yellow.

The following yellows were found to be poisonous: Picric acid, Saffron-surrogate or Victoria-yellow, Martius-yellow, Aurantia or Imperial-yellow, Orange II, Metalin-yellow, and Safranin.

The following reds were harmless, or very nearly so: Soluble-rouge or Azombin, Soluble-purple or Neucoccin, Bordeaux B, Pouceau R, Metanitroazotin, Annatto-substitute or Naphthion-red, Congo-red, Fuchsin, Acid fuchsin, Corallin or Rosolic acid, and Eosin. None of those yet known have proved poisonous.

The following greens are all harmless: Dinitroso-resorcin, also Naphthol, Acid or Helvetia, and Malachite-greens.

The following blues, violets and blacks are also harmless: Water or China-blue, Indulin, Indophenol, Coernlin and Alizarin and Methylen-blues, Methyl and Acid Violets, Wool and Naphthol-blacks.

[9] Lehmann's Praktische Hygiene, 1890, p. 545.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

REGULAR Meeting, Monday, March 23, 1891, the President, DR. FREDERICK I. KNIGHT, in the chair.

ANATOMICAL SPECIMENS.

DR. HOMANS showed a specimen of cysto-sarcoma of the testicle, on which Dr. W. F. Whitney reported as follows: "The testicle was symmetrically enlarged to about three times the normal size. The section surface showed numerous small, irregular cysts filled with a thin yellowish fluid. Between these there was a soft grayish tissue, which on microscopic examination was found to be made up of large round cells with little intercellular substance."

Dr. Homans also showed the specimen of an amputation at the lower third of the leg. The pathological examination made by Dr. Whitney gave the following result:

"The foot and lower part of the leg showed an old

fracture into the lower end of the tibia, with large fragment lying loosely attached as a sequestrum. The tissues about the joint were thickened, and traversed in various directions by sinuses."

Dr. Homans also showed a specimen of spindle-celled sarcoma of the abdomen removed from a woman thirty-five years of age. The operation was undertaken because the tumor was cystic and more or less connected with one ovary. On opening the abdomen the omentum was seen filled with large vessels of a dark color, and covering the growth to which it was adherent. When this omentum was more or less separated, hæmorrhage was quite free. Upon careful examination a sarcoma attached to the intestines and broad ligament, and pretty well filling the lower part of the abdominal cavity, was found. Having started to remove the growth, it was necessary to finish, as the hæmorrhage was very free. A part of the tumor was cystic, and contained considerable fluid. Dr. Whitney reports that it is a spindle-celled sarcoma.

Dr. A. T. Cabot showed the specimen from a case of ruptured tubal pregnancy.

The patient was a young woman of twenty-eight, who had been married for several years. She had never been pregnant, but her menses had always come irregularly, so that when on the 10th of December, 1890, she passed her menstrual period, and had but a slight show a week later, nothing especial was thought of it. About the 5th of January, 1891, she was suddenly seized with a sharp pain in the lower part of the abdomen. She was examined four days later by Dr. C. S. Millet, who was called to see her, and he found then a hard resistant mass in the lower right segment of the abdomen. She had had in the mean time one or two attacks of sharp pain, requiring considerable doses of morphia to give her even comparative comfort.

Her temperature gradually rose, and on the 12th of January, she then being in a high fever with a pulse at 126, and a temperature of 102°, Dr. Cabot saw her in consultation with Dr. Millet. It being plain that something was going on in the abdomen which called for a laparotomy, no vaginal examination was made in order that the fingers might be kept clean for the laparotomy.

The patient was etherized, and an incision made along the right line a semi-lunaris. At once upon opening the peritoneum there was a gush of dark red blood. The opening was enlarged, and the resistant mass found to consist mainly of clots of blood, which were turned out. A small mass attached to the right side of the uterus was now felt; and the true nature of the case being now clear, this was ligated and removed. The peritoneal toilet was made as rapidly as possible, the abdominal cavity being thoroughly irrigated with warm water. A glass drainage-tube was inserted to the bottom of the pelvis, and the wound was closed.

The patient made a rather slow, but uninterrupted recovery, and now is about the house. The portion removed was a Fallopian tube, which showed a considerable dilatation near its fimbriated extremity. This dilated portion had a smooth lining, and was partly filled by a rather firm clot. Its wall was ruptured on one side. No fœtus could be found. Dr. C. S. Minot examined the specimen in the fresh state, and felt no doubt that the dilated portion of the Fallopian tube was lined by an ovi-sac.

Dr. J. J. Putnam read a paper on

PERSONAL OBSERVATIONS ON THE PATHOLOGY AND TREATMENT OF NEURALGIA OF THE FIFTH PAIR, ILLUSTRATED WITH PATHOLOGICAL SPECIMENS.[1]

Dr. S. J. Mixter described the

RESECTION OF SECOND AND THIRD DIVISIONS OF FIFTH NERVE AT THE FORAMINA ROTUNDUM AND OVALE.[2]

Dr. Cabot said that he had done a number of operations on the various branches of the fifth pair of nerves, with more or less success. When the operation was done upon the peripheral branches, he thought it important to always remove all of that portion of the nerve which lay within the bony canal. When the inferior dental was the nerve involved, he operated by trephining opposite the dental foramen, cutting the nerve at that point, then seeking it at its emergence from the mental foramen, seizing that end of the nerve, and pulling the trunk out of the whole length of the canal in the bone. He had operated in this way on all three branches, the supraorbital, the infraorbital and the inferior dental nerve at the same time with good results.

He reported a case in which two years ago he operated upon the inferior dental nerve, in the manner described, for severe, long-standing neuralgia about the corner of the mouth and chin. The relief following this operation was entire and lasted for about twenty months, at the end of which time the neuralgia returned. It being thought at that time by Dr. Walton, who saw the case in consultation, as well as by himself, that the return of pain might be due to the regeneration or survival of some fibres of the nerve in the canal, the wounds were re-opened, and all of the soft parts that could be reached within the canal were drawn out and cut off. A hot probe was also passed into the dental foramen to destroy any nerves that remained. This operation did not afford relief, so that later he cut down after the manner recommended by Zuckerkandl, and removed a portion of the nerve at its emergence from the foramen ovale. This was done three or four months ago, and is thus far a perfect success.

Dr. J. C. Warren: I am under the impression that an operation like that which Dr. Mixter has described was originally proposed by Dr. Pancoast of Philadelphia. I am not sure whether he performed the operation or not. I think he was one of the first to divide the nerve at the foramen ovale.

In regard to the division of the infraorbital nerve, it is a very simple operation, I think. The patient receives very little shock or disturbance and recovers very readily; and it certainly promises, in the great majority of cases, very satisfactory results. Many surgeons are in the habit of trephining the antrum to divide this nerve. It seems to me that this is unnecessary. The operation which contemplated following the nerve up through the division in the orbit promised sufficiently satisfactory results by following that method rather than the one that contemplated going through the antrum and seeking the origin of the nerve by the opening of the farther wall.

In one case which I had the operation had to be repeated, and at the second operation there was found a distinct renewal of the nerve fibre. Since the last operation, there has been no pain as far as I am aware. That operation was performed two years ago.

[1] See page 157 of the Journal.
[2] See page 164 of the Journal.

Dr. D. W. Cheever: The experience that I have had is of cases seen some time ago. I have the records and results of five operations,— one for the infraorbital, one inferior dental, one at the foramen rotundum with Meckel's ganglion, and two of the foramen ovale. One was much relieved; one was not relieved; two were apparently cured so far as heard from; one was operated on twice, and finally relieved. There is an interesting history to one of the cases that I will read later.

With regard to the operation, the one formerly done was known as Carnochan's operation; first done I think, by him in New York. That consisted in trephining the antrum, following the nerve up under the orbit, cutting through the posterior wall of the antrum, and removing the nerve and Meckel's ganglion at the foramen. The other operation at the foramen ovale is, I think, to be justly attributed to Dr. Pancoast, and consisted in reaching the foramen ovale by cutting the coronoid process of the lower jaw, and not by cutting the zygoma. The operation by cutting the jaw is the one I have always done, and I have no experience with the other.

In 1873 I operated on a woman of sixty-five who had had the tic douloureux eighteen years in the left cheek and side of the nose. The operation was done by trephining the antrum, and the wound closed, and the patient was discharged in about two weeks. At first the pain was quiet, it slowly recurred, but did not resume its paroxysmal character. Before the patient left the hospital, however, she required opium, showing that the result of the operation was incomplete. Subsequently, according to Trousseau's plan, she was narcotized, taking many grains a day. Afterwards this was discontinued, and she got into a pretty comfortable state of health.

Two years after the operation, in reply to a letter of inquiry whether she was benefited, she said "Only to destroy the pain in the immediate locality of the operation. On the other cheek, temple and both lower jaws it is just as bad as ever." This species of neuralgia was described by Trousseau as of the epileptiform variety. An attack would be brought on by opening the door, for instance, or any slight noise. Trousseau says this is the most intractable of all; and in this the operation failed, and his method of narcotization also failed.

The same year Dr. Thorndike operated on a man sixty-one years of age, and so far as heard from, that case was cured, and there was no recurrence of the pain. He remained in the hospital some weeks, and never required any opium.

The most interesting case, however, is this: "Facial neuralgia of the inferior dental nerve; three operations to excise and remove, etc." The first step she took to relieve the pain was to have the teeth drawn. The first operation was to trephine the lower jaw. The nerve was cut out the full width of the hole, and the patient slept at first. After a week she had no spasms in the jaw; but in about ten days the paroxysms came back as severely as before the operation. A second operation was done a few months afterwards. She came back to the hospital, and wished it. At this time it appeared to me probable that some filaments of the nerve had got caught in the jaw, and that the operation had not been thorough enough. The trephine hole was again uncovered, the dental canal opened, and the nerve destroyed for some distance up and down. Finally, the stump of the nerve was cut off from its entrance into the inferior dental canal. This was the second operation. This time she had no spasms for two weeks, and was considerably relieved. For seven weeks she did well; then the pain returned in the same cheek; and a third operation was done in about two months afterwards. At this time what is known as Pancoast's operation was done. Dr. Gannett failed to find evidence of degeneration in the nerve removed. The patient slowly healed up.

Apparently she was relieved only of the paroxysmal pain and not cured.

Dr. Webber: I have been very much interested in the paper and all that has been said. I think Dr. Putnam deserves a great deal of credit for working up the pathology of those nerves so carefully. I think this is very instructive, and will show us the reason for advising an operation comparatively early and not putting it off. It must be that these degenerative, inflammatory changes progressing will involve larger stretches of the nerve, involve other branches; and it is important, as it seems to me, to operate in season. These neuralgias are the most trying of affections to the patient and physician.

Dr. Walton: I have advised and seen quite a number of these deep operations, and have been very much interested in Dr. Putnam's exposition. The possibilities in this branch of surgery should be widely known. Dr. Putnam has very wisely made prominent the division of neuralgias into these two classes, the ordinary recurrent form (largely and generally reflex), and a second class which includes those characterized by persistent epileptiform seizures of great violence and lasting many years, especially common in middle-aged and elderly persons. This second class one learns to recognize almost at a glance, and I quite agree with Dr. Putnam that it is of little use in these cases to begin with the ordinary routine treatment before resorting to operation. It is almost cruel to make these patients undergo this terrible pain year after year while we try these other methods, if we are sure we have such a case in hand. The histological results seem to justify this view, as almost without exception these nerves are found to be diseased.

In regard to the question of operating high up. The principal reason why the fifth nerve is so liable to neuralgia, aside from reflex causes and its dental distribution, is that it runs through bony canals and over bony prominences. This tends to set up inflammation and disease in the nerve, and consequently where we have one of these cases in hand, it seems futile to operate at the point of emergence, and we will sooner or later have to have recourse to the higher operation. In Dr. Cabot's case, where the first operation relieved temporarily, I dare say that a satisfactory explanation was that there was diseased nerve higher up than the first operation, and that the pain was referred to the point of emergence through the irritation of those fibres affected. The third operation at the foramen ovale, before the nerve had entered upon its course through the bone, removed the difficulty entirely and removed it for good.

I have an illustration in a case (not connected with the fifth nerve) which shows the futility of other applications for a pain resulting from organic trouble affecting the nerve. This was the case of a professor of astronomy in a Wisconsin college, who consulted me in regard to a pain in his index finger in the course

of one of the nerve branches. This pain he had had two years, and it was getting more and more severe and spreading up the arm. He had a sensitive scar over the point where the pain started, which had been there fourteen years, since he cut the finger with a chisel. That the cut had injured the nerve was shown by the complete numbness in the region supplied by this branch. I advised trying other treatment for a time, and in case of non-success resorting to operation. I applied electricity, gave strychnia and other tonics, but nothing seemed to benefit him except slightly, and in the course of about three weeks I advised operation. Dr. Richardson did the operation, and found a neuroma in the course of the nerve, which was excised. About a half-inch of the nerve was removed. An interesting feature of the case was that the sensation, which had been lost for fourteen years, reappeared. The area of sensibility gradually lessened until finally he could feel as well in that part of the finger as in any other. The case shows also how much a nerve will stand, and how it may become regenerated if operative means are resorted to.

I was very glad to hear of Dr. Mixter's operation upon the case where he operated for the second and third branches. The result of the operation has been very satisfactory. It seems very ingenious in him to have combined the two operations. I see no reason why it should not be done. I should agree with Dr. Cheever that the lateral operation is the preferable way to reach the spheno-palatine ganglion.

It is important to bear in mind the distribution of the buccal branch of the third division. I have known a case of neuralgia of the third branch to be mistaken for that of the second, through lack of familiarity of this distribution. The pain was around the ang'e of the mouth, the region supplied by the buccal branch which is sent off too high up to be reached by the ordinary operations. This distribution led me to advise operation at the foramen ovale, which was done with perfect success, I believe, by Dr. Richardson.

With regard to the question of reflex neuralgia, and what is practically a neuralgia of the meninges, namely, migraine, I should probably lay more stress than Dr. Putnam on reflex causes. I think the majority of ordinary facial neuralgias come from reflex causes, and especially the teeth. We are too much influenced by these cases of neuralgia in which tooth after tooth has been pulled out without relief. Such cases should not cause us to underrate the part played by dental irritation. I think those cases are really exceptional as regards ordinary neuralgias. I have seen many cases where there was absolutely no question of its coming from the teeth. I remember a case of very violent neuralgia in a patient whose teeth were all beautifully filled, nor did the pain even start, as it generally does, from any particular tooth; it had, however, started after the filling of a certain tooth. There was no tenderness on percussion. The dentist finally removed the filling at my request, with instant relief of pain, and himself said the tooth had been improperly excavated. I have had occasion of late to see a number of cases of neuralgia starting from dental irritation of various sorts. The crowding of a wisdom tooth, for example, is liable to produce a pain in the temporal region. It is well to be familiar with the directions in which the reflex neuralgias will be referred.

With regard to migraine, I think the majority of cases come from reflex causes, more especially errors of refraction, though I am not sufficiently enthusiastic to say they all come from this source. I have seen the accidental inversion of a cylindrical glass with oblique axis, cause daily migraine, which only disappeared after rectifying the mistake.

As I understand him, Dr. Putnam's idea is that in these cases where there is a reflex cause for neuralgia, it may be that there is a peculiar idiosyncrasy or irritability of the nerve centres, which renders them more ready to react to a reflex cause than a healthy nerve centre. I have no doubt this condition obtains in certain cases; but if it is so in the majority, I do not understand why the neuralgia disappears when we remove the exciting cause.

One reason why the fifth nerve is so liable to neuralgia (besides its peculiar course) is that this is the one nerve that practically comes to the surface, which it does in the carious tooth, where it is exposed not only to mechanical but to deleterious chemical influences, a fact which should be borne in mind in investigating all cases of acute trigeminal neuralgia.

Dr. Morton Prince: I think Dr. Putnam's paper is a very valuable contribution to our knowledge of this subject. He has suggested many points of practical importance in pathology and treatment. It was not so many years ago that we looked upon neuralgias in general as a purely functional disease, and it is only within the last few years that the fact has been forced upon us that many, if not most, of the severer neuralgias are due to neuritis. But for practical purposes, I think we must distinguish between the acute or subacute cases and the more intractable chronic cases. It is amongst the acute or subacute cases that, in my experience at least, we find those of a reflex nature. We can study this very prettily at times in persons whose vitality is at a low ebb, as in cases of neurasthenia. In such cases it is possible at times to watch the diffusion of an external irritation from one centre to another, setting up one neuralgia after another. On the other hand, I, myself, have not been able to trace the reflex process so distinctly, as Dr. Walton has, in the more chronic cases.

The acute and subacute cases yield quite readily to other forms of treatment. There are on record many subacute and chronic cases which have yielded to electricity in the form of faradism applied with the brush. I have not had experience with this method myself. The more chronic cases, I think, as a rule, must eventually come to operation, as Dr. Putnam suggests; but it must also be borne in mind that they also sometimes yield to other forms of treatment. The very worst case I have ever seen was cured by galvanism. It was a case resembling very much such a case as Dr. Cheever has described to-night. It was of the epileptiform variety. The spasms were brought on by the slightest provocation, and the man was a perfect wreck physically and morally, and yet his disease yielded rapidly to treatment by galvanism. There was immediate improvement, and now at the end of a year he still continues in perfect health. In his case the neuralgia was unquestionably due to a neuritis, as there was a decided anæsthesia over the whole cheek supplied by the affected nerve. The case is also of interest as illustrating another point which Dr. Putnam has brought out, and that is, that an external irritation may be the immediate cause of a neuralgia, but it is not for all that the primary cause. This same man had had a previous attack a year or more before, and

a medical gentleman found a plug of wax in his ear; after removing it the neuralgia ceased, and the case was reported in the *Boston Medical and Surgical Journal* as a case of reflex neuralgia cured by the removal of a piece of wax from the ear. The neuralgia afterwards came back, and the case drifted into my hands. There was unquestionably inflammation of the nerve, and the plug of wax only served as an exciting cause to bring on an attack. It seems to me very difficult to prove whether an external irritation, such as this patient felt, is merely the exciting cause or the primary cause. I do not think I ever ordered the teeth out. They always came to me after they were pulled out. The neuralgia in such cases had not been diminished. It may be that the inflammation in such cases has spread farther along the course of the nerve, but it is a very hard thing to prove; nor have I had very much luck in the cure of migraine by correcting errors of refraction. To speak frankly, I have become very tired of having the eyes of these patients fitted to glasses. I know a good many cases have been cured, but perhaps I have had rather hard luck at it. Such cases as have come under my care have not been very much benefitted.

DR. P. C. KNAPP: I can say almost nothing from my own observation in regard to the surgical treatment or in regard to the pathological changes in the fifth nerve. I think we are all of us indebted to Dr. Putnam for his very careful study. I have, however, never yet seen a case of facial neuralgia where I have advised operation. Doubtless there are various cases of facial neuralgia which have come to me at the hospital where, if they continued under my care, I should have advised an operation. They come once or so, and disappear; so that I can speak only of the medical treatment. I agree fully with Dr. Putnam in his praise of aconitine. There is another form of treatment, not spoken of, from which I have recently had rather startling success, and that is in the use of antisyphilitic remedies where there was no probability of syphilis. I had, some two months ago, a lady come to me from the northern part of Vermont with a history of most intense epileptiform neuralgia, beginning some four or five years before, where, upon the most careful inquiry, I could get no evidence whatever of syphilis. She had been to another neurologist in the city who had told her the only thing to be done was to have an operation, to which she was very averse. The attacks had had intervals of remission in the past, but from the first of September until January, when I saw her, she was having most frightful twinges of neuralgia many times each day. Any slight draught, an attempt to eat, any jar, would bring on the pain. I gave her aconitine and antisyphilitic treatment, and for two months she has been entirely free from her neuralgia. It is too soon to speak of a cure, of course. I supposed from the probabilities that it was one where operation would be necessary.

I agree fully with Dr. Prince in regard to the reflex neuralgias and the reflex neuroses in general. The more cases that I see, the more carefully I go into the symptoms, the more thoroughly and deeply I hunt for reflex causes, the more pains I take to get these reflex causes removed, the fewer cures I find from such treatment alone. The cases of neuralgia of the lower jaw of long standing that I see, have usually had the teeth out. Of course, I occasionally see a case that comes reporting pain in the face for two or three days; I find a bad tooth there, and tell them to go to the dentist and have that tooth seen to, and if they have further trouble to come back.

In case of migraine, I grow more and more sceptical of the cases which are immediately and permanently cured by the removal of a plug of wax from the external auditory canal or the removal of a carious tooth or the removal of some remote irritant. There have been in the history of neurology a good many beautiful reflex theories, reflex paraplegias from a long prepuce, the various reflex nervous conditions arising from the ovaries, and the ascription of all forms of nervous disease, organic and functional, to the ocular muscles.

DR. CLARENCE J. BLAKE read a paper on

OTALGIA.[1]

DR. JACK: I think the important part played by the teeth in otalgia has been pretty well touched upon. It is a frequent occurrence at the infirmary to have children come in suffering with pain in the ear, in whom no acute inflammation of the ear is found. The teeth are then inspected, and if any are found unsound the case is referred to the dentist, with instructions to return if the pain does not cease afterwards. I remember several cases of otalgia in adults entirely relieved by treatment directed wholly to the nose. I should also like to emphasize what Dr. Blake has put rather strongly in his paper, on the importance of determining whether a patient suffering from pain in or about the ear has an otalgia or a commencing acute inflammation of the middle-ear. Cases not infrequently occur in which beginning serious inflammation has received treatment for neuralgia and valuable time been lost.

DR. PUTNAM: I would like to put myself on record in regard to the reflex influences. What I meant to indicate was that migraine is a special disease and has its own characteristics, and that to a great extent it may be said that the other forms of facial neuralgias and other neuralgias of the body are special diseases with their characteristics, and that although these diseases may from time to time be provoked by some reflex cause, they are not simply the expression of activity of that cause. Furthermore, I do strongly believe that in the case of a disease so distinctly hereditary and constitutional as migraine, it is highly improbable that the reflex causes should be nearly so prominent as in the case of facial neuralgia.

I think Dr. Starr handled this subject with great judgment a year ago, when the matter of ocular reflexes and gynecological reflexes were in debate. He pointed out that the reaction of a nerve centre to any irritating cause depends largely on the degree of irritability of the nerve centre. As neurologists we have to admit that in the great majority of cases the main condition at fault is the condition of the nerve centres, and that neurasthenia and migraine are to be treated on that basis.

DR. CHEEVER: I should like to correct Dr. Walton if he thought I said the way to reach the foramen rotundum was by the method described by Dr. Mixter, and not by trephining. I do not know but that Dr. Mixter's method is the better way. That remark, however, should be credited to him, mine being confined to the old operation.

[1] See page 165 of the Journal.

Recent Literature.

Institul de Chirurgie. Annl., 1890–91. Bucuresci: Lito-lipographia Carol Göbl.

Under this title, Professor Assaky, of Bukharest, dedicates to the students of medicine a first volume of clinical instruction, based upon original investigation made in connection with two practical courses: surgical anatomy and special operations.

Part I of this book (two hundred pages) contains results of researches, by ten physicians, concerning rheumatism, pulse and temperature, therapeutic action of di-iodo-salicylic acid, abdominal tumors, and cranio-cerebral topography, *et al.*

These reports are in detail, so that one can follow the cases with exactitude. The article on cerebral localization, by Dr. Assaky, is especially valuable because of the plates, which are numerous and elaborately elucidated by color, lines and figures. His reports of abdominal operations are accompanied by a number of photo-engravings.

In Part II (one hundred pages) are found some of Professor Assaky's clinical lectures: (1) Descriptions of operations in various diseases in connection with the uterus and its physiological annexes; (2) the tabulated histories of several cases of tuberculosis treated with Koch's lymph.

The material portion of this work is excellent, most creditable to the paper-maker, the printer and the binder.

Professor Assaky is also editor-in-chief of the Roumanian medical periodical, *Clinica*, a recently established journal published in Bukharest. An extended notice of it was given in this Journal some time ago.

Later issues have furnished valuable additions to "the healing art," in clinical reports and contributions to hygiene — looking toward rational, preventive sanitation.

F. B. S.

Œuvres Complètes de J. M. Charcot. Tome IX: Hémorrhagie et Ramollissement du Cerveau; Métallothérapie et Hypnotisme; Electrotherapie. 8vo, pp. viii, 571. With 34 illustrations in the text and 13 plates. Paris: Aux Bureaux du Progrès Médical. 1890.

This, the ninth volume in the series of Charcot's collected works now in progress of publication, is not, like the preceding volumes on nervous diseases, made up from the lectures reported by his pupils, but is merely a collection of various articles which have appeared in medical journals for the past twenty-five years, many of which are, of course, familiar. Thus in the section on cerebral hæmorrhage we find the familiar account of the influence of miliary aneurisms in the production of hæmorrhage, originally published many years ago; as well as numerous brief notes of comparatively little importance. The work itself, therefore, brings us nothing new. It is of value, however, in collecting various articles which would otherwise have to be sought in old files of journals. A part of them were substantial contributions to our knowledge, while others would never have been reprinted except for the name of their author.

Influenza. — It is reported that influenza has appeared as an epidemic in Moscow, and that many persons are each day reported as incapacitated by it.

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MICROBICIDE PROPERTIES OF THE GASTRIC JUICE: MICROBES OF THE ALIMENTARY CANAL.

In an interesting paper in the *Wratch*, Kianowski has taken up the subject of the microbes of the stomach and the effects of the gastric juice on them. To solve the question, he undertook a series of experiments on both sick and well persons. These experiments have given the following results: (1) The quantity of bacteria found in the contents of the stomach one hour after a meal is not so much in inverse relation with the acidity of the gastric juice and the quantity of hydrochloric acid therein, as it is in direct relation with the amount and kinds of micro-organisms introduced with the food; (2) Within the limits of the mean acidity due to hydrochloric acid, the gastric juice systematically and completely kills the microbes in the stomach; the more prolonged the action of the gastric juice, the more microbes it kills. (3) There is a general relation between the augmentation of the general acidity due to the normal or abnormal properties of hydrochloric acid on the one hand, and the quantity of destroyed microbes on the other. (4) If the acidity of the gastric juice is feeble, the microbes multiply in the stomach. (5) Experiments on sick persons have shown that if their gastric juice contains a sufficient quantity of free hydrochloric acid, it possesses the same microbicide qualities as the gastric juice of healthy persons.

The conclusions of this important paper are: (1) In a state of fasting, the stomach of a man in good health contains a great many microbes. (2) The quantity of microbes existing in the stomach during the first hours of digestion is in direct relation with the quantity introduced with the food, drink, air, saliva, etc. (3) The gastric juice, and especially its hydrochloric acid, possesses most manifest microbicide properties. (4) The microbes probably take no active part in the processes of stomach-digestion. (5) Persons who by reason of some disease secrete little hydrochloric acid, more easily become the victims of

poisoning by microbes or their products introduced into the stomach. (6) It is not well in the morning to remain too long a time fasting, and during epidemics such as cholera, it will not do to let the stomach become empty; the latter should always contain a certain quantity of food and, if possible, sterilized food.

It will be seen that these views are foreign to those published several years ago by Bichamp, who referred the entero-digestive process to the action of certain microbes called by him microzymes. Bichamp's theories were purely speculative, being based on Pasteur's studies in fermentations; his pretended microzymes have not been seen by any other microscopist. The older chemical theory of digestion still holds its grounds.

Van Puteren, in the *Deutsche Medizinal Zeitung*, reports the results of 127 experiments made upon 40 children, the ages ranging between three and seventy-seven days. Material for examination was obtained from the stomach by a sterilized Nelaton catheter, and examined biologically.

The proportion of bacteria in the stomach was found to be greatly increased whenever the tongue was coated or deposits existed in the mouth, these being conditions in which bacteria in the mouth were most abundant. The bacteria were much more numerous in infants fed on cows' milk than on those nursed at the breast.

Of especial interest are the results which he obtained after the mouth had been thoroughly cleansed. In eighteen per cent. of the experiments made, *no bacteria* were obtained from the stomach of breast-fed children. In forty-one per cent. the proportion to the average number found in the stomach under other circumstances was as 1 to 130. In the cases in which bacteria were found to be absent from the stomach, the digestion was apparently perfect; hence the writer reaches the conclusion that bacteria have no essential physiological function in the infantile stomach.

This writer's experiments further show that the acidity of the stomach does not prevent bacterial growth. He made eight experiments to determine the acidity, and found it only .6 to .8 per cent. While Miller had shown that 1.6 per cent. acidity was necessary to inhibit bacterial growth.

It will be seen that these latter experiments hardly agree with those of Kianowski. Doubtless in healthy infants fed on unsterilized cows' milk, the action of the gastric juice is similar in its microbicide properties to that of adults that habitually eat unsterilized food. Such infants are more likely to microbe infection through the alimentary canal than infants fed on breast-milk. And it may well be conceived that the alimentary canal of the latter will be tolerably free from bacteria, especially if the mouth be kept clean.

The influence of bacteria in abnormal intestinal processes is awakening attention, and this whole subject has been investigated of late by Baginsky, Lesage, Escherich and others. The bacteria found in summer diarrhœa are very numerous, but how far they are simple accompaniments and how far they are the causes of morbid changes is not yet definitely determined. Certain it is that there is everywhere great interest in maintaining intestinal antisepsis in all the summer complaints of children and adults, and the results of such antiseptic treatment are sufficiently encouraging.

SYPHILIS IN ICELAND.

Iceland is one of the few countries in which, according to the statements of all competent writers, syphilis does not exist. The malady is reported to have been introduced into the country from without, at several different epochs, but it has never taken root, so that the theory has been advanced that the people of this island possessed a certain immunity from the disease. Lesser, considering it highly improbable that a people differing as little from the other branches of the human race as the Icelanders do, should offer so striking a phenomenon as an immunity from this scourge, addressed a letter to Dr. Schierbeck, in Rejkjavik, in which he proposed the following questions:

(1) Is it true that no syphilitic symptoms are met with among the present generations of Icelanders? (2) Do not the chronicles of Iceland, at the time when syphilis was spread over all Europe, — that is, at the end of the fifteenth and the beginning of the sixteenth centuries, — record the appearance of the disease in Iceland also?

The reply of Dr. Schierbeck, the foremost medical authority in Iceland, is interesting and not uninstructive from the point of view of preventive medicine. In the course of eight years' experience upon the island, he had met with but four well-authenticated cases of syphilis in native Icelanders. This is sufficient proof that the theory of immunity is untenable. All of these cases were acquired in foreign countries, and he knows of no case occurring in people who had never left the country. This shows that syphilis is not of common occurrence, and is in no sense so widely spread as in most other countries. The question next arises why the disease, that is occasionally imported, does not spread more rapidly. The answer is found in the local conditions, the isolation of the centres of population, and the intimate acquaintance with every one living in the vicinity, which makes discovery of any importation a comparatively simple matter. The importers of syphilis may be divided into two classes, the natives and the foreigners. The natives who import the disease belong, without exception, to the upper classes, as the others have no money for travelling. If a native infected with syphilis returns to the country, his first care is to keep his disease a secret, and he does not think of marriage until a proper period of treatment has been observed. The foreigner does not find it an easy matter to come into close association with the people, and the country contains no facilities for prostitution. He regards it as not impossible that the frequency of the occurrence of syphilis may be much

augmented in the near future, when the emigrants to America begin to return in larger numbers.

Dr. Schierbeck was unable to obtain data for an answer to the second question proposed — as to the occurrence of syphilis in the fifteenth and sixteenth centuries in Iceland. It is quite probable that it may have been recorded at that time under other names, and a suspicious word, "Pletsot," frequently occurs, which demands careful study.

MEDICAL NOTES.

Army and Navy Examinations. — During the past ten years 384 candidates have presented themselves to the Army Boards, of whom 76, or 22.3 per cent. passed and 31 were rejected for physical disqualifications, and the remainder failed to pass the medical examination. During the same period, 237 candidates presented themselves before the Navy Board, of whom 55 were approved and passed, 75 rejected for physical disqualification and the remainder either withdrew or failed to pass.

The Mexican Pharmacopœia, which was issued in 1884, is undergoing revision at the hands of the Mexican Pharmaceutical Society, with a view to the incorporation of new remedies which have found acceptance in the medical profession since the date of its publication.

Foot and Mouth Disease. — Professor Fröhner, of Berlin, has recently published a paper in the *Zeitschrift für Fleisch und Milch Hygiene*, tending to show that foot-and-mouth disease can be transferred to human beings by means of the milk of cows suffering from it, or by means of butter made from such milk.

The Seventh International Congress of Hygiene and Demography, opened its session in St. James's Hall, in London on Monday, the Prince of Wales presiding. There were 2,300 delegates present. Among those present were Professor Pasteur, of Paris, and Professor Koch, of Berlin.

The Society of German Naturalists and Medical Men. — The sixty-fourth meeting of this Society will be held in Halle from September 21st to the 25th. Professor Nothnagel, of Vienna, will speak on "The Limits of Medical Art;" Professor Ebstein, of Göttingen, on "The Art of Prolonging Human Life;" and Dr. Ackermann, of Halle, on "Edward Jenner and the Question of Immunity."

The Tariff and Optical Instruments. — The Cincinnati *Lancet-Clinic* calls attention to an advertisement in the *Ophthalmic Review*, published in London, of a very old firm of opticians in Philadelphia, which is noteworthy on account of its closing sentence. It is an offer to furnish a set of trial lenses for $60 (£12) excepting in the United States where the price is $75.

Hygienic Advantages of the Electric Light. — Referring to a statement which has been publicly made that the adoption of electric lighting in place of gas at the office of the Savings Bank Department of the General Post-office, London, has been followed by a marked reduction in the amount of sick leave, the *Lancet* says it has good authority for believing that the statement in question is substantially correct. Although the time which has as yet elapsed — two years — since the introduction of the new illuminant has been insufficient for the collection of trustworthy statistics, the paper named thinks there is every reason to believe that electric lighting will prove to be much more wholesome than ordinary gas flames. An electric lamp does not compete for the oxygen of the apartment in which it is placed, and this circumstance gives it a marked advantage over any open flame. It cannot, like some forms of gas-burner, be used to promote ventilation; but in ordinary situations its harmlessness is a much more important property.

The German Emperor's Health. — It is reported that the German Government has deemed it necessary to issue a semi-official notice regarding alarmist reports about the emperor's health. The German newspapers have occasionally alluded to ridiculous stories of the emperor's epileptic fits, brain disorders, purulent inflammation of the ears, caries of the cranial bones, and a host of other maladies.

The Discovery of the Sex of the Fœtus during Pregnancy. — Dr. R. Ross says in the *British Medical Journal* that for some years he has been able in many cases, to forecast the sex of the child before birth from the position in which the mother tells him she feels most distinctly the fœtal movements. Most women can, but some cannot, differentiate the locality. In those who can he finds the following rule applies with wonderful accuracy: If the mother describes the fœtal movements as chiefly and most distinctly on the left side he confidently predicts a male birth; if on the right, he as surely determines the sex to be female.

The New University in London. — At a meeting of the Committee of the Privy Council on the petition of University and King's Colleges for a Charter to a new university in and for London, on July 29th, Lord Selborne announced that all the medical schools in London have now agreed to associate themselves with the medical faculties of University and King's Colleges to form the medical faculty of the proposed new Albert or Metropolitan University. The Royal Colleges have declined to be represented on the Council. Owing to delays, entailed by the necessary forms of procedure, the new university cannot come into existence before February, 1892, at earliest.

British Institute of Preventive Medicine. — In consequence of an influential deputation of medical and scientific men, Sir Michael Hicks-Beach, President of the Board of Trade, has granted the required license to register the British Institute of Preventive Medicine as a limited liability company,

with the omission of the word "limited." The license, however, is not to be construed as implying approval by the President of the Board of Trade of experiments on animals. The articles of association were duly signed on July 21st, at Sir Joseph Lister's residence. Among the signatures are those of Sir Joseph Lister, Sir Spencer Wells, Sir Henry Roscoe, Sir George Humphrey, Mr. Watson Cheyne and others. The official license has also been received. The granting of the license had for some time been opposed by anti-vivisectionists.

Congress for the Study of Tuberculosis. — On July 27th, this congress was inaugurated by a visit to Professor Lannelongue's wards at the Hôpital Trousseau, where the cases treated according to the new chloride of zinc method were passed in review. Later, the first meeting was held at the Faculty of Medicine under the presidency of the veteran Villemin. About 400 members were present to listen to addresses by Professors Verneuil, Grancher and Arloing. The latter inquirer gave experimental proof of the inefficiency in the laboratory of Koch's tuberculin. Meetings were held on the 28th, 29th, 30th and 31st, and visits were paid to Professor Verneuil's wards at the Hotel Dieu, where patients treated by injections of iodoformed ether were presented; to the Val-de-Grâce Military Hospital, to see cases treated by injections of creasoted oil; and to the Institut Pasteur. A grand banquet took place on Thursday evening. In connection with this subject, the *Progrès Médical* revives the question of the disinfection of railway carriages employed for the conveyance of phthisical visitors to the southern health resorts. Prausnitz is quoted as having examined the dust of *coupés* on the express train doing the service between Berlin and Meran — a route much frequented by consumptives. He inoculated this dust into guinea-pigs according to the serial method of Cornet, and found that two out of five *coupés* contained the tuberculous bacillus. The journal above mentioned urges the Paris-Lyon-Méditerranée Compagnie to provide — at least, for the better class travellers — antiseptic spittoons.

BOSTON AND NEW ENGLAND.

Death-Rate of Boston. — During the past week the number of deaths in Boston was 209, a mortality of 23.6. This is less by 69 than occurred during the corresponding week last year. The number of deaths reported as due to cholera infantum was 48, whereas during the previous week it was 92.

Recently Appointed Medical Examiners in Massachusetts. — A list of medical examiners appointed by Governor Russell previous to July 1st will be found in the Journal of June 25th. The following is a list of those since appointed with their residences. Most of them are reappointments. July 8th: William A. Dolan, Fall River; Richmond B. Root, Georgetown; Charles A. Carleton, Salem; A. Elliot Paine, Brockton; George L. Ellis, Middleborough; Benjamin H. Hartwell, Ayer. July 16th: Patrick Henry Keefe, Worcester; Dyer B. N. Fish, Amherst; Christopher Seymour, Northampton; Henry A. Jewett, Northborough; John C. Irish, Lowell; Charles C. Holcombe, Lee. July 23d: Erastus C. Coy, Montague; Andrew H. Hodgdon, Dedham; George S. Osborne, Peabody. July 30th: Edgar D. Hill, Plymouth; David W. Miner, Ware; Thomas H. O'Connor, Clinton; John D. Kielty, Fitchburg; Walter M. Wright, Orange; Charles A. Bemis, Medway. August 6th: Garry de N. Hough, New Bedford; Harry M. Cutts, Brookline.

A Bequest to the Rhode Island Hospital of about $70,000 is contained in the will of John W. Smith, recently offered for probate.

NEW YORK.

The Ambulance Service. — A commission having been appointed by the Grand Jury to make an examination of the ambulance service in the city and to offer suggestions with a view to increasing its efficiency, the report of the commission was last week read in the Court of General Sessions. Regarding the private hospitals — the New York, with its Chambers Street Branch, St. Vincent's, the Roosevelt, the Presbyterian, and the Manhattan, the commission states that it found the ambulance equipment and service such as to call for approval. The ambulance surgeons are all graduates of medicine and are not detailed for this service until after they have had six months' active duty in the hospital wards. The private hospitals have twelve ambulances.

The Commission denies that patients are transferred from these hospitals to Bellevue to diminish their death-rate. Such transfers as are made, the commission is satisfied, are proper and necessary. In the report a table is given showing the number of ambulance calls attended by the different hospitals during the year 1890. St. Vincent's had 1,930 calls; the Manhattan, 567; Chambers Street, 2,678; the Presbyterian, 1,202; the New York, 1,321; and the Roosevelt, 1,530. Of the public hospitals, Bellevue had 4,246 calls; Gouverneur, 2,374, and Harlem, 1,225. These three hospitals have ten ambulances.

The report urges the Department of Charities and Correction to hasten the establishment of the proposed Fordham Hospital for the relief of the upper east side districts, and also recommends the establishment of a hospital and ambulance service on the west side of the city between Roosevelt Hospital (59th Street) and Manhattan Hospital (at 131st Street). Fear is expressed by the Commission that cable roads in crowded streets will cause many more accidents during the first year or two of their use, and the report urges that its recommendations should be attended to at once. "While," continues the report, "we find very much to commend regarding the response by all hospitals to ambulance calls upon them, we are compelled to criticize very generally the present lack of adequate official means of conveying prompt notification to the hospitals of the necessity for an ambulance at a location

where some one may be suffering." The report then goes on to say that it is a discredit to the city that it should still be without a comprehensive system of signal boxes or stations scattered through the streets in large numbers by which an ambulance can be summoned. The Commission would, therefore, urge the Police Department to secure, without delay, the most approved and perfect system available for rapid communication with station-houses, both for police purposes and ambulance service. It also urges the Board of Estimate and Apportionment to appropriate immediately the money required for this object.

Miscellany.

A LAW FOR THE PREVENTION OF BLINDNESS.

FOLLOWING the example of the State of New York, where a similar law was passed in 1890, the State of Maine has passed the following law, which was approved by the governor on March 28th:

SECTION 1. Should one or both eyes of an infant become reddened or inflamed at any time within four weeks after its birth it shall be the duty of the midwife, nurse or person having charge of said infant to report the condition of the eyes at once to some legally qualified practitioner of medicine of the city, town or district in which the parents of the child reside.

SECT. 2. Any failure to comply with the provision of this act shall be punishable by a fine not to exceed one hundred dollars, or imprisonment not to exceed six months, or both.

SECT. 3. This act shall take effect on the first day of June, eighteen hundred and ninety-one.

THE ARTIFICIAL PRODUCTION OF DENTAL CARIES.

For the past year Mr. Sewill, following other experimenters in the same field, has been endeavoring to produce caries in extracted teeth; and certainly the microscopical appearances presented by the sections shown at the Odontological Society, says the *Lancet*, differed but little from those of natural caries.[1] He found that the best mixture of organic substances for the purpose was one part of bread to eight of saliva. Meat with saliva remained alkaline, and if a small quantity of acid were added became again rapidly alkaline. Albumen, whether as white of egg or other forms, acted in the same way. Saliva and starch produced little acid, which was soon exhausted.

The teeth were immersed in the mixture in glass-stoppered bottles, and kept at a temperature of 35° to 37° C. The bottles were unstoppered about once a day for examination; this, of course, admitted air, and if the mixture became putrid, it at once showed an alkaline reaction, in which case the teeth were taken out, well washed, and the mixture renewed. The mixture became rapidly acid, and remained so (unless putrefaction to a large degree supervened) for from three to five weeks. The acids present were acetic and lactic; of the former five per cent. and of the latter one-half per cent. were found after three weeks. The effects upon the tissues were precisely the same, both macroscopical and microscopical, as in natural caries.

[1] Science, August 7th.

As in natural caries, the decay was found to commence most readily in places where there was ill-formed enamel or flaws or fissures which allowed access to the dentine, in which tissue the caries progressed more rapidly than in enamel. Cementum resisted longer than enamel, but at length yielded, and allowed the dentine beneath to be invaded. Discoloration was often present, and it was found that carious dentine readily took up stains from such substances as are often admitted to the mouth in medicines or articles of food. Microscopically the translucent zone is well shown, also the "pipe-stems" appearance in transverse sections, and the dentinal tubes are filled with micro-organisms, just as in natural caries.

The conclusions that Mr. Sewill draws from these experiments, and from the fact that caries takes place in natural teeth which are used as artificial substitutes, are, that caries is entirely due to external agents, and that vital action in no way modifies the disease.

BRONCHO-PNEUMONIA.

MOSNY,[1] in a paper on the lesions, causes and prophylaxis of broncho-pneumonia, concluded as follows:[2]

Broncho-pneumonia is an acute specific inflammation of the bronchioles and lobules which are involved.

Whatever be primary or secondary, and whatever be the lesion which has preceded, the lesions of this disease differ in the different cases only by the variations of a process which is always identical.

Only the duration of the broncho-pulmonary inflammation or the virulence of the pathogenic agent can account for differences observed in the appearance of the histological lesions.

The lesions, according to their topographical arrangement, show two distinct types: a lobular type, due to the action of the streptococcus pyogenes and alone constituting true broncho-pneumonia, and a pseudo-lobular type, due to the pneumoccocus lanceolatus of Talamon-Frænkel, which should be distinguished from broncho-pneumonia and classified with simple pneumonia, of which it is a particular form, occurring among children.

The gravity of the disease, which is almost the same for all ages, should be considered as follows: (1) In the adult, owing to the rapid generalization of the pulmonary infection. (2) In children, owing to the constant presence of extensive accessory mechanical lesions, atelectasis and emphysema, which narrow the field of hæmatosis and cause death from asphyxia.

Broncho-pneumonia is epidemic and contagious. The only way to prevent its propagation is to practise antisepsis in isolation wards for infectious diseases with which it is constantly complicated.

A RECENT DECISION IN A SUIT FOR MALPRACTICE.

THE Appellate Court of Illinois has recently affirmed the decision of the Cook County Circuit Court in favor of the defendant in the case of Sims *vs.* Parker.[3] The plaintiff Sims, had been wearing, upon

[1] Rev. Mens. des Mal. de l'Enf, March.
[2] Archives of Pediatrics, August.
[3] Journal of the American Medical Association, August 1st.

a physician's advice, a truss on the left side as a preventive for hernia. This was prescribed because of a pain which he felt in the left inguinal region in 1881. In March, 1888, he applied to Dr. Parker, who is a dealer in trusses, for relief from a similar pain on the right side. On examination Dr. Parker found an inguinal swelling, which he pronounced a hernia, and fitted Sims with a double truss. From the beginning Sims complained of the pain of the truss, but continued to wear it for about a month, when he became feverish and went to bed. He was confined to his bed about three weeks, at the end of which time the inguinal swelling had become as large as an egg, and in three weeks more had developed into an abscess seven inches long, the contents of which were evacuated by his attending physician, Dr. Snyder. Subsequently another abscess formed.

The contention of the plaintiff was that the truss had been improperly applied, and had produced the abscess.

At the close of the evidence the Court directed the jury to find a verdict for the defendant. The decision of the court contains the following:

The physician who attended plaintiff and who was a witness on trial, was unable to say whether there was an incipient abscess at the time the truss was first adjusted, or whether the abscess was produced by the pressure of the truss. The fair result of the evidence of the experts sworn is, that there was in fact no rupture on the person of plaintiff, but it is also proven that it is very difficult to tell, with certainty, in many instances, whether in fact there is hernia or not, particularly in the case of fleshy persons. Defendant introduced a number of leading surgeons and physicians of the city, who testified to the reputation and skill of defendant in treating hernia, and in fitting and adjusting trusses.

While there is evidence tending slightly to support the contention that the abscess may have been produced by the pressure of the truss, there is absolutely no evidence that defendant was negligent or unskilful in his diagnosis or in fitting the truss. Proof that he was mistaken as to the existence of a rupture, or that the abscess was caused by the pressure of the truss, was not enough to entitle plaintiff to a verdict.

Proof of a bad result or of a mishap is of itself no evidence of negligence or lack of skill. The defendant is qualified to practice medicine and surgery, and the evidence of the experts in his profession shows him competent and skilful. Before a recovery could be had against him, it must be shown that his treatment was improper or negligent, not merely that he was mistaken, or that his treatment resulted injuriously to plaintiff. A physician or surgeon, or one who holds himself out as such, is only bound to exercise ordinary skill and care in the treatment of a given case, and in order to hold him liable, it must be shown that he failed to exercise such skill or care.

THERAPEUTIC NOTES.

BUTTER AND OLEOMARGARINE. — The *Medical and Surgical Reporter* gives the following ready test for differentiating these substances: Dissolve 25 parts of silver nitrate in 100 parts of alcohol of 95°. Put some of this solution in a test-tube, and melt and add a portion of the material to be tested. Agitate for a few moments, and let stand. Pure butter retains its natural color, while the margarine will become a dirty brick red, the color of a mixed sample depending upon the quantity of the adulterant present therein. The test is said to be sufficiently delicate to detect five per cent. of margarine, while with ten per cent. the color reaction is very strong.

A PURGATIVE FOR CHILDREN:[1]

℞ Castor oil . . . . . 3 iv.
Infusion of coffee . . . . . 3 ij.
Powdered sugar . . . . . 3 v.
Yolk of egg . . . . . No. j. M.

Make an emulsion.

ARISTOL IN IVY POISONING. — Dr. J. J. Levick[2] reports a case in which severe poisoning from rhus toxidendron was promptly much relieved by the free dusting of powdered aristol on the affected parts.

HYDRASTIS CANADENSIS FOR NIGHT-SWEATS. — Cruse has used the fluid extract of hydrastis canadensis with very good results in the night-sweats of phthisis.[3] He gives it in doses of thirty minims, and often finds that the dose does not have to be repeated for some time.

CAFFEINE IN PNEUMONIA. — De Gempt urges the use of caffeine in cases of threatened collapse in various asthenic diseases, but especially in acute pneumonia, and cites several cases in which it was successfully used in conjunction with stimulants.[4] He believes the drug indicated in the course of acute pneumonia when there is evidence of cardiac failure, such as rapid, irregular pulse with lowered tension. Should the pneumonia be of asthenic type, it should be used from the onset, and the earlier in the course of the disease it is used after asthenia develops, the better. In cases of this sort, caffeine, in doses of .35 gramme four to five times daily, raises the arterial tension, diminishes the rate of the respiration and pulse, and lowers the temperature. Its action is prompt, but in urgent cases it had better be used hypodermically. It is advisable to continue it for a brief period after the febrile defervescence.

[1] L'Union Médicale, July 9th.
[2] Medical News, July 25th.
[3] Medical Press, July 18th.
[4] Therapeutic Gazette, July.

METEOROLOGICAL RECORD,

For the week ending August 1, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...26	29.94	69	75	63	54	75	65	N.	S.	8	10	C.	C.	
M..27	29.96	67	75	59	67	49	58	N.W.	W.	11	8	F.	C.	
T. .28	30.06	66	77	56	45	65	55	S.W.	S.W.	7	12	C.	O.	
W..29	30.07	62	66	59	87	94	91	S.W.	E.	6	15	R.	O.	.53
T..30	29.89	62	66	59	89	100	94	N.E.	E.	9	14	O.	R.	†
F..31	29.86	64	71	57	95	57	76	N.W.	N.W.	5	7	R.	C.	.91
S.. 1	29.79	66	78	54	55	70	62	W.	S.W.	8	13	F.	O.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 1, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,515,301	866	481	37.92	7.60	29.28	.84	3.24
Chicago . . .	1,099,850	492	288	30.00	5.80	24.40	7.20	1.80
Philadelphia .	1,046,964	427	230	29.67	8.51	21.85	2.30	2.53
Brooklyn . .	806,343	484	285	30.40	9.60	22.80	.80	3.60
St. Louis . .	451,770	—	—	—	—	—	—	—
Boston . . .	448,439	276	172	38.16	11.52	36.00	.36	.72
Baltimore . .	434,439	—	—	—	—	—	—	—
Cincinnati . .	296,908	102	46	23.52	15.68	13.72	2.94	4.90
Cleveland . .	262,000	—	—	—	—	—	—	—
Pittsburg . .	240,000	107	61	42.68	7.44	21.34	3.88	6.79
Milwaukee . .	240,000	98	58	29.58	5.10	13.26	1.02	7.14
Washington . .	230,392	—	—	—	—	—	—	—
Nashville . .	76,168	26	11	26.95	15.40	15.40	7.70	—
Charleston . .	65,065	40	22	17.50	2.50	12.50	2.50	—
Portland . . .	36,425	13	5	23.07	7.69	23.07	—	—
Worcester . .	84,655	27	20	40.70	7.40	29.60	—	3.70
Lowell . . .	77,696	48	21	43.68	16.64	39.52	4.16	—
Fall River . .	74,398	—	—	—	—	—	—	—
Cambridge . .	70,028	49	28	36.72	16.32	33.28	2.08	—
Lynn	55,727	28	13	57.12	17.85	42.84	3.57	3.57
Lawrence . .	44,654	14	8	35.70	7.14	35.70	—	—
Springfield . .	44,179	26	13	53.90	15.40	50.00	—	—
New Bedford .	40,733	28	19	57.12	3.57	53.75	—	—
Salem	30,801	22	13	54.60	9.10	54.60	—	—
Chelsea . . .	27,909	18	13	5.55	5.55	5.55	—	—
Haverhill . .	27,412	16	8	37.50	12.50	18.75	—	18.75
Brockton . .	27,294	—	—	—	—	—	—	—
Taunton . . .	25,445	9	5	55.55	—	33.33	—	—
Gloucester . .	24,651	4	1	—	—	—	—	—
Newton . . .	24,379	5	3	20.00	—	20.00	—	—
Malden . . .	23,031	13	6	38.45	7.69	30.06	—	—
Fitchburg . .	22,037	6	4	50.00	16.66	50.00	—	—
Waltham . . .	18,707	6	0	—	16.66	—	—	—
Pittsfield . .	17,281	3	1	33.33	33.33	33.33	—	—
Quincy . . .	16,723	16	12	56.25	—	50.00	—	—
Newburyport .	13,947	9	4	22.22	—	11.11	—	11.11
Medford . . .	11,079	4	3	—	—	—	—	—
Clinton . . .	10,424	4	2	50.00	—	50.00	—	—
Hyde Park . .	10,193	3	1	33.33	—	33.33	—	—
Peabody . . .	10,158	3	1	—	33.33	—	—	—

Deaths reported 3,392; under five years of age 1,858; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,145, consumption 300, acute lung diseases 156, diarrhœal diseases 864, diphtheria and croup 92, typhoid fever 73, scarlet fever 40, whooping-cough 27, measles 21, cerebro-spinal meningitis 16, malarial fever 9, erysipelas 2, puerperal fever 1.

From scarlet fever New York 19, Chicago and Brooklyn 6 each, Philadelphia 4, Cincinnati and Milwaukee 2 each, Lynn 1. From whooping-cough Pittsburgh 9, Philadelphia 7, Milwaukee 3, New York and Brooklyn 2 each, Chicago, Nashville, Lynn and Springfield 1 each. From measles New York 11, Chicago and Brooklyn 3 each, Philadelphia, Pittsburgh, Milwaukee and Cambridge 1 each. From cerebro-spinal meningitis Chicago 3, Boston and Worcester 2 each. New York, Philadelphia, Brooklyn, Milwaukee, New Bedford, Malden and Quincy 1 each. From malarial fever New York 5, Brooklyn 3, Charleston 1. From erysipelas Pittsburgh and Brooklyn 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending July 18th, the death-rate was 17.5. Deaths reported 3,159: acute diseases of the respiratory organs (London) 189; diarrhœa 166, whooping-cough 93, measles 67, diphtheria 36, scarlet fever 20, fever 16.

The death-rates ranged from 8.8 in Derby to 24.5 in Liverpool, Birmingham 17.0, Bradford 15.9, Hull 20.2, Leeds 17.2, Leicester 13.2, London 17.0, Manchester 18.3, Nottingham 12.3, Sheffield 16.0.

In Edinburgh 17.1, Glasgow 17.7, Dublin 16.4.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 1, 1891, TO AUGUST 7, 1891.

First Lieutenant ALFRED E. BRADLEY, assistant surgeon U. S. A., granted leave of absence for thirty days.

The leave of absence granted Assistant Surgeon WILLIAM L. KNEEDLER, U. S. A., is extended one month.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 8, 1891.

R. A. MARMION, surgeon, detached from Navy Yard, Norfolk, and to the Navy Yard, Boston.

G. F. WINSLOW, surgeon, detached from Marine Rendezvous, Boston, and to the Navy Yard, Norfolk, Va.

J. B. PARKER, surgeon, detached from Navy Yard, Boston, and placed on waiting orders.

F. G. BRAITHWAITE, assistant surgeon, ordered to Receiving-ship "Wabash," at Navy Yard, Boston.

J. B. URIE, assistant surgeon, detached from Receiving-ship "Wabash," and to the Marine Rendezvous, Boston.

F. J. B. CORDEIRO, passed assistant surgeon, detached from Naval Hospital, Chelsea, Mass., and granted two months' leave of absence.

G. McC. PICKERELL, passed assistant surgeon, from Hospital, New York, and to Hospital, Chelsea.

SOCIETY NOTICES.

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE. — The fortieth meeting of the Association will be held in Washington, beginning with the council meeting on Monday, August 17th. As there will be meetings of several affiliated societies about the time of the Association meeting, and as the International Congress of Geologists will hold its first meeting in this country during the last week in August, the official time given for the Association meeting will be from August 17th to September 2d. This will allow members of the Association to unite with and attend the meetings of the other societies.

F. W. PUTNAM, *Permanent Secretary*, Salem, Mass.

THE TRI-STATE MEDICAL ASSOCIATION OF ALABAMA, GEORGIA AND TENNESSEE will hold its third annual meeting at Chattanooga, Tenn., October 27–29th.

W. L. GAHAGAN, M.D., *Secretary*, Chattanooga.

THE MISSISSIPPI VALLEY MEDICAL ASSOCIATION. — The annual meeting will be held in St. Louis, October 14–16.

I. N. LOVE, M.D., *Chairman Committee of Arrangements*.

DEATHS.

HORACE DUFEE, M.D., M.M.S.S., died in Dorchester, August 7th, aged eighty-one. He graduated from Harvard College in the Class of 1832, and from the Harvard Medical School in 1837.

RICHARD LEE MACDONNELL, M.D., Professor of Clinical Medicine at McGill University and Physician to the Montreal General Hospital, died July 31st, aged thirty-five.

DR. JOHN SUTHERLAND, one of the pioneers of hygienic progress in England and author of numerous official reports on matters concerning the public health, died July 14th, aged eighty-two.

BOOKS AND PAMPHLETS RECEIVED.

Des Glycosuries non Diabétiques. Par G. Halsted Boyland. Paris: Henri Jouve. 1891.

Illustrated Cases of Congenital Club-Foot. By H. Augustus Wilson, M.D. Reprint. 1891.

Arsberättelse frau Sabbatsbergs Sjukhus, Stockholm. Afgifven af Dr. F. W. Warfvinge. 1891.

Transactions of the Medical Society of the State of New York for the Year 1891. Published by the Society.

The Remarkable Effects of Diuretin in Removing Dropsy. By Robert H. Babcock, A.M., M.D., Chicago. Reprint. 1891.

Linear Craniotomy for Defective Mental Development. By William H. Morrison, M.D., Philadelphia, Pa. Reprint. 1891.

Session 1891-92. Annual Announcement of the New York College of Veterinary Surgeons and School of Comparative Medicine, Chartered 1857.

The Varying Significance of Intermittent Albuminuria. Report of Autopsy of a Case. By John Winters Brannan, M.D., New York. Reprint. 1891.

Report of Progress in the Treatment of Thoracic Abscess. Traumatism of the Chest. By J. McFadden Gaston, M.D., Atlanta, Ga. Reprints. 1890, 1891.

Lecture.

NEURASTHENIA AND ITS MENTAL SYMPTOMS.[1]

THE SHATTUCK LECTURE FOR 1891.

BY EDWARD COWLES, M.D., SOMERVILLE.

(Continued from No. 7, page 157.)

Two Special Conditions resulting from Changed Sensations. — The more greatly altered sensations, when localized and limited, may be estimated correctly, while the more general and pervading ones cannot be so well corrected. There are two prominent conditions due to changes in these general sensations that are of the highest clinical importance in neurasthenia.

The first of these conditions is "morning depression" or "morning tire." It is sometimes called "morning misery," but the tire is the essential fact. Both the mental feelings and the common sensations are altered by increase of intensity, and measurably represent the truth as to the bodily condition, although they still appear contradictory and lead to mental error. For example, a patient having fairly comfortable feelings during the latter half of the day and in the evening, sleeps more or less well till the early hours of the morning. But on awaking he is in the depths of depression. Instead of being refreshed by sleep, all his feelings of inadequacy, misery and hopelessness are then at their keenest. The physical signs of exhaustion are more manifest. The patient feels added alarm because the sleep has not done him any good in the natural way. After breakfast he feels better, and by the middle of the forenoon his circulation is again active and steady and perhaps accelerated. The press of business and the daily interests are stimulating, and his nerve-cells, while probably giving out as much as they are taking in of energy, are evidently better nourished than in the nocturnal condition of functional inactivity. This symptom is significant by its daily recurrence. It is among the leading ones of neurasthenia; and it may occur in all degrees, from the morning feelings of being unrefreshed, to a recurring sense of misery and despair that prompts to suicide. The physician should detect this symptom of morning tire and depression, which appears early in the disease, and should not be misled by the patient's sense of comfort. The morning more nearly represents his true condition.

This symptom of "morning tire" has long been observed in melancholia, but it is now being better explained as evidence of neurasthenia. The "mechanism" of these phenomena of "distressing awakening," is most complex and involves the problems of the physiology of sleep, the rhythm of nocturnal rest and relaxation and daily activity, and the "pathology of night," of which interesting studies are of late being made.[54] A valuable bibliography of the subject is given by Ch. Féré.[55] Broadbent[56] says, "It is in the early morning that depression of spirits is liable to be at its worst in nervous debility, so called; or there is the morning headache which is relieved by the bath and breakfast, or wears off as the day advances; or the subject of this affection is more tired on waking up than on going to bed." Haig[57] says he has "no difficulty in proving that it is just in these early morning hours that the excess of uric acid in the blood is greatest, and its effects on arterial tension most marked." Uric acidæmia, in its relation to disorders of the circulation and to irritability, languor, and depression, certainly invites careful inquiry.

The significance of these tired wakings is very great, as a symptom of morbid sleep which may be due to a variety of causes, involving particularly the weakness of functional power, through its exhaustion or annulment by toxic influences as in neurasthenia.

The other special condition is that of *anæsthesia of the sense of fatigue.* It results from altered organic sensations; and the truth as to the bodily state is obscured by the change or absence of certain data of sensation that go to make up a man's judgment of himself. The indications are paradoxical and misleading.

In the example of morning tire just mentioned, the excessive work and worry might go on with increase of cerebral or general exhaustion; also the mental misery of the morning might be continued. Then a strange phenomenon may happen. The patient, who has before complained of his fatigue, now says he does not feel tired. He may have no definite sensations of inner discomfort from dyspepsia, constipation, etc., although the general miserable feelings will continue with lessening or disappearance of the evening recuperation. Still, he claims that he is not tired, — that there is nothing the matter. His attention is more and more concentrated upon the objects that have habitually interested him, or upon his morbid ideas, with lessening power to turn from them. Thus the process goes on in its vicious train.

This is one of the commonest of all symptoms, and often appears early and in slight degrees. It represents the descent of the patient's condition towards the depths of nervous exhaustion, and to a point where the sensory power itself is materially lessened. The patient, previously guided by the sense of fatigue in desisting from effort, has now lost his guide, — his natural feeling. He cannot believe his physician or his friends that he is over-tired. He is conscious of inefficiency, mental and physical; and he feels added self-reproach because he cannot accomplish what he ought when he does not feel sufficiently ill or fatigued to justify relaxation from duties that are pressing, or seem so to him. The stimulation of change, travel, etc., is often prescribed when there is fictitious appearance of the patient's ability to bear it. Tired women will carry on their domestic duties by "working on their nerves," or walk for miles without natural fatigue, seeking health in "exercise" when it is most damaging. This symptom comes out most clearly in cases that have advanced to melancholia, but it is a true index of the neurasthenic state in all its stages, and has its lesser forms in many of the milder cases. In the extreme cases the lifting up of such patients from the depths of exhaustion is a most interesting process to watch, when they "come to the sense of feeling." If previously agitated, restless and apparently fatigued, they grow more quiet, — sometimes they take to their beds with a profound sense of weakness. They say they feel worse, and are alarmed as well as their friends; but they are really better. This is a distinct stage in the upward progress toward recovery.

The conditions of melancholia, in its most neuras-

[1] Delivered before the Massachusetts Medical Society, June 9, 1891.

[54] See Macfarlane, Lancet, vol. i., 1891, p. 824.

[55] Art. Pathology of Night. Brain, Oct. 1889, p. 368.

[56] The Pulse, p. 76.

[57] Loc. cit.

thenic stages, are among those in which this symptom of change of the sensations that go to make up the sense of fatigue is most plainly declared. In one class of cases there are the conditions of diminished sensitiveness, dulness or languor, affecting in different degrees both sensory and mental activities even to the degree of apparent or real stupor, in which the motor paresis is so striking a symptom. There is in these cases a manifest consistency in the presence of a blunting effect upon the sense of fatigue. It seems consistent enough also in that class of cases in which there are the associated symptoms of mental agitation, irritability and restlessness as manifestations of hyperæsthesia, that are continually prompting the patient to motor activity,— just as analgesia may exist with a hyperæsthesia which itself is attended by a diminution in delicacy of touch. It is, of course, true that the attention plays its part in the matter, — the attention being occupied by intensified ideas and emotions either of pleasure or of pain, there may be, for the time, an unconsciousness of the sense of fatigue that might be felt if attended to; so it is in hypnotism, or when contusions are not perceived in a foot-ball scrimmage, or even fatal wounds in battle by men who live long enough to tell of them. But this fact does not militate against the validity of clinical observations and confessed experiences in the cases of many intelligent patients in whom the condition is of long continuance. In the extreme cases of agitation and restlessness as is well known, the patients will walk and walk by the hour, sleep fitfully, turn in their beds or leave them many times, often restlessly changing their positions by day and by night. Like symptoms of restlessness are observed also in many cases of neurasthenia without the mental symptoms requisite for diagnosis of melancholia, but both these classes of patients often declare the absence or blunting of the sense of fatigue. It should be understood that these references are made to melancholia because it presents this symptom in so pronounced a way as to reveal its importance, and something of its nature; its recognition in its lesser manifestations in neurasthenia thus becomes easier.

This phenomenon appears in cases presenting such early stages as those described to illustrate the genesis of pathological fatigue. There is evidence of this peculiar symptom in the graphic statement, quoted from the physician who felt excessive tire and the "letting down of spirits" as soon as his work was reduced to one half of that he had just previously been doing. All the conditions of the "fatigue" were undoubtedly present before the "letting up of work" in which the exciting stimulation to activity possibly created peculiar toxic products which obscured the real conditions. At all events, in such conditions as these and the equally common experience of the "second-day tire," there is that state of pathological fatigue which is marked by a notable absence of a due sense of tire. It is certainly obvious, as a physiological fact, and as a clinical observation, as in the illustrative cases, that the degree of bodily and mental fatigue is not measured by the feeling of it. It is one of the most familiar of all familiar facts that men and women are continually over-doing themselves without knowing it. When a condition of pathological fatigue is established, this anæsthesia of the sense of fatigue, in some degree, becomes a part of the general condition. It is important to recognize it, — to give it a name, — to teach the patient to understand it, — and then its great value as a diagnostic guide to treatment will appear. Knowledge of it also has often the happiest effect upon the patient in gaining that condition which Mitchell sought before the rest treatment could be begun,— "the absence of thought with the friction of worry which injures." The patient being at fault in attempting to judge of himself by his altered and blunted sensations, is always alarmed at the mystery of his anomalous and contradictory feelings. With the feeling of inadequacy from a sense of abated motor power there is exhaustion also of sensory power. An intelligent patient always understands when told that there is tire, not only in the power to do things, but in the power to feel the tire. An apparent mystery is readily cleared up by this explanation, because it so fits the patient's experience. Then he can see the force of the rule that he must limit his exercise by quantity and time and not by feeling.

In the wide range of conditions from the milder to the severer stages, they are constantly presenting paradoxical phenomena, as they may well do, when the one neurasthenic cause is the basis alike for anæsthesia and hyperæsthesia and all their attendant trains of symptoms which are apparently so contradictory. Not in all cases does this anæsthesia of the sense of fatigue appear, nor always in like associations with other symptoms. There are different classes of cases also according to temperament, character, and habit. Women with the "New-England conscience" need always to be held back against over-effort, and too early effort in all stages of the disease, particularly of convalescence. Whether or not in the course of the neurasthenia there has been a middle period of melancholia, or the like, the principle is always the same. Then in such cases, in the condition of relative comfort and exhilaration which makes the delight of the period of convalescence, there is always danger of over-exertion. The sense of fatigue not being fully recovered, it is at one time felt and again lost, as a sequence of some indiscretion in exercise — some overstimulation of emotion, either pleasurable or painful. This is the time for the greatest caution. But when at least the patient feels naturally tired, even though upon moderate effort, and can appreciate the restfulness of repose, then is convalescence assured if conducted with care within the limits of the recovered energy.

This analysis and estimate of the clinical manifestations of neurasthenia go to show how gravely significant and dangerous is the condition which is represented by the symptom of diminished sensitiveness, or anæsthesia of the sense of fatigue. Immediately concurrent with the induction of pathological fatigue, with its dual elements of diminished energy and auto-intoxication, almost the very first effect of these is to begin the annulment of the sense that prompts to the conservation of nervous energy. When this peculiar and very common effect is produced, the greater the exhaustion the less the direct sense of it through the normal channels. The patient vaguely feels a lessened adequacy to effort of body or mind, — a lowering of the emotional tone, — many sensations of misery as emphasized in the morning tire, — much irritability and restlessness, — and all the changes characterized as hyperæsthesia, paræsthesia and anæsthesia; in like manner there is alteration of the sense of fatigue, in some of its complex elements.

There is another class of cases in sharp contrast

with the type just described. They have usually been long ill and have developed secondary conditions. Rest being at last enforced, by the completeness of the break-down, or becoming a habit by indulgence, the rest treatment is sometimes carried too far, probably beyond the point where exercise should begin. This is a point difficult to determine, but the positive gaining of weight is a good guide. But in the condition of the prolonged "bed-cases," or in the relapsing cases, there is likely to come, when they grow fat and when they do not, a state in which fatigue is keenly felt. As an extreme manifestation of this is the inability to sit upright, to hear reading or talking, etc.; even the slightest muscular exertion, as the raising of an arm, is distressing, and there is great sensitiveness to sound or light. There is not only "horrible depression" upon slight exertion, but a "terrible exhaustion." The quickened pulse, palpitation, change in color, etc., are physical signs in proof of great weakness in such cases. This appears, indeed, like hyperæsthesia of the sense of fatigue in some of its complex elements; but when these cases are led to convalescence, it is long before the natural sense of fatigue, and resistance to its quick disturbance, is recovered. With the dyspeptic aversion to food, the weakened power of assimilation of what is taken, the discouragement of many relapses, and all the effects of habit, these cases are difficult enough.

The mechanism of the sense of fatigue is obscure, as is the complexity of its origin. The difficulty of distinguishing between the central nervous fatigue and the peripheral fatigue of muscles has been noted. The central sense of innervation, and of the need of increasing effort with the increasing fatigue, would seem to be necessarily an element in it. But this very mental activity of brain cells is assumed to yield, along with waste products and work, the organic sensations of fatigue. Again, the same is true of the muscular sense, or sense of weight, as affording sensations of work being done, of exhausted energy, or of disability of contractile power. But the muscular sense is said to belong rather to the special senses, and we see it still acting normally in the cases of pronounced fatigue-anæsthesia, when there is no marked ataxic change of muscular coördination, even in very restless and irritable cases. It is, indeed, but a question of the degree of alteration of the muscular sense? With doses of alcohol, ether, and the like, we may first blunt the sense of fatigue, then more and more the sense of weight, even to its annulment as the necessary element in coördination of muscular movement, and the result may be the ataxy of intoxication. In the transitions between these first and last stages of changed sensations, as the effect of one and the same poison, does the common phenomenon of the anæsthesia of the sense of fatigue in neurasthenia represent but a first stage, as a peculiar effect of some special poisoning? We have not as yet, in the study of these pathological conditions, the data of experimental study to demonstrate the mechanism of this symptom. But we have certainly the final fact of its clinical manifestation, and it stands the test of the practical application of this explanation of it.

With this additional study of these alterations of organic sensations, the way is prepared for a characterization of them in a summing up of the symptoms of neurasthenia. Three orders of these symptoms have been set down; the fourth should therefore include those relating to the alterations of sensitiveness, both in the direction of anæsthesia and hyperæsthesia, and should present the conclusions drawn from this last analysis and estimate of them. The following statement, then, is meant to include, in their four orders:

The Subjective Symptoms of Neurasthenia. — (1) Depression of spirits, — lowering of the emotional tone and a sense of ill-being. (2) Decrease of the power of attention (reflex attention), and sometimes of memory. (3) Morbid introspection, retrospection and apprehension (worry hypochondria). (4) Diminished sensitiveness, dulness and languor (anæsthesia); irritability and restlessness (hyperæsthesia).

These minor orders of symptoms go to make up a symptom-group that forms a clinical picture of neurasthenia, covering the elements of many possible variations of its forms. The sources and mechanism of each order of symptoms have been studied, and this should furnish the data for a precise definition of the disease. That of Dana has already been amended, in these pages, to include the element of languor that represents the fundamental element of toxic blunting of sensitiveness; and while this, and the specification of excessive weakness and irritability, imply a mental element, the prime importance of this, as early recognized by Beard and Mitchell, is not adequately noted. On the basis of the foregoing summary of symptoms the amended definition may be written as follows: *Neurasthenia is a morbid condition of the nervous system, and its underlying characteristics are excessive weakness, and irritability or languor, with mental depression and weakened attention.*

Diagnosis. — Neurasthenia being regarded as a condition of the nervous system, manifested by functional disorder and without structural changes being as yet demonstrable, and presenting symptoms of so many variable phases, its determination as a disease is peculiarly limited to the method of exclusion. It is not only a direct result of stress and wear on the one hand, but it is so constantly secondary to debilitating influences of all kinds, — the "general debility" of our fathers in medicine, — that it has often to be differentiated as being the remote and not the immediate effect or symptom of some antecedent disease. In other words, such a disease may pass away and leave the nervous symptoms to continue as if somewhat by habit. On the other hand, it is the initial condition and often the sole basis of a great variety of symptom-groups, which are framed into pictures of "clinical entities"; it must therefore be differentiated from those disorders of the nervous system in which something has been added to the simple neurasthenia, of graver functional disturbance and perhaps of definite structural change.

Neurasthenia often stands as a middle term between general etiological conditions and nervous disorders. It simplifies and clarifies the view, to regard neurasthenia as the common etiological and initial term to many varieties of symptom-groups, and even of definite nervous diseases, about which there is so much confusion as to their etiology. This is peculiarly true of mental diseases with which we cannot yet get beyond a classification of symptom-groups.

The nutrition of nerve-cells being primarily at fault, toxic influences being always primarily present, central disorder of the nervous system being usually manifested by the earliest symptoms, and cerebral exhaustion through mental strain being one of the most common forms, the diagnosis must often be made solely upon

the subjective and mental signs. This may be done early enough for prophylaxis in many cases. Any notable and persistent alteration from the natural manner and appearance, indicating a lowering of the emotional tone, in persons otherwise in apparent good health, suggests inquiry as to the cause of the abatement of natural vivacity and the lack of the usual mental control manifested by unwonted irritability of temper which may be confessed. These premonitory indications are of the most practical value. Active professional and business men who do much brain-work and incline to sedentary habits, women under a monotonous strain of domestic life or subjected to special mental anxiety and grief, or the indolent who suffer especially from functional disuse and defective elimination, all, at times, are likely to experience these mental signs of "fatigue" and toxicity. The primary order of symptoms being present, and the causes continuing, some of those of the other three orders that have been specified will soon be manifest in some slight degree, and be more or less slowly developed. The study of the genesis of these subjective symptoms and their nature as summed up in the foregoing section, may serve to show how their natural order of development affords a method of analysis that is an aid to diagnosis.

Neurasthenia should first be differentiated from the antecedent conditions, with a discrimination of its immediate and remote causes. This demands a determination, as far as possible, of the nature of the inanition and the auto-intoxication, whether partial or general, — and, otherwise, the study of the "mechanism" of the symptoms. This implies, at the outset, a careful study of all the objective symptoms by the usual methods of diagnosis. Their character as due to neuroses must be established as at least probable, to the exclusion of organic diseases of the nervous system, although these may still have a neurasthenic basis that is amenable to treatment. The inquiry is then led into the central "weakness," the diagnosis of which points out the need of general treatment rather than of medication for the localized disorders. The objective items of the most practical diagnostic importance in this regard are of two classes, and pertain to the elimination of toxic waste products, and to the processes of repair by nutrition and tonic influences.

The way is now clear for a further differentiation of the subjective or mental symptoms to determine the diagnosis and prognosis with respect to melancholia. It must be remembered that many cases of melancholia have no more than the four orders of symptoms, — no delusions, and no essential impairment of integrity of the reasoning power; — it is a question of degree. On the other hand, very pronounced manifestations of these orders of symptoms, more than in some of the cases of melancholia, will not truly bear that diagnosis, although the underlying organic conditions are of the same nature in both these types of cases. Difficult as it is to draw the line between "nervous prostration" and melancholia, the crucial test may perhaps be best stated as a question of the degree of impairment of the higher power of inhibitory control, — the weakening of the voluntary power exercised through the attention. There may come a time in these conditions when painful ideas become so dominant, because of the inability to inhibit them, as to endanger the patient by promptings to suicide. Then we say it is melancholia, and that there must be medical restraint. But in many cases the true conditions of melancholia are established before this symptom comes. It is a matter of temperament, education, training, "habits of thought," — there are those nobler souls who withstand to the last degree the nervous exhaustion, the misery of mental pain, and the terrible temptation to seek relief through "the open." But many are weak in will and inhibition, and yield early to specious reasoning and the bias of the emotional tone, for whom recovery would be as sure as from other forms of functional weakness. But this bias of emotional tone, which more or less influences all alike, may depend exactly upon those alterations of the "sense of body" which annul the instinctive love of life, thus technically establishing the diagnosis of melancholia. The differential diagnosis of neurasthenia and melancholia, then, depends upon an estimate of the degree of nervous exhaustion with reference to the mental symptoms, particularly as to depression of feeling and weakened inhibition. This estimate must include a judgment of the individual as to character and of the probable continuance or increase of the alterations in the organic sensations as affecting the natural instinct of self-preservation. Such alterations become the basis of a fifth order of symptoms which complete the symptom-group that constitutes a typical melancholia.

The physical or objective signs do not afford a good differential guide as between neurasthenia and melancholia. The latter may exist without more pronounced symptoms of general debility, disorders of digestion, etc., than are common to neurasthenia, although they are often seen in melancholia, as anæmia, a sub-normal temperature, and a urine which may be scanty and condensed, etc., which suggests special study as to its indications of deficient elimination.

The two special conditions of morning tire and anæsthesia of the sense of fatigue have been described as of the highest diagnostic value in respect to the neurasthenic condition. They do not afford differential indications, however, except that these symptoms are usually more pronounced in melancholia. It should be noted that morning tire is common as a transient symptom after excesses in dissipation or in over-work, but it becomes significant in neurasthenia by its more or less persistent recurrence.

Hypochondria may be differentiated as being subject to the principles just stated in so far as that it is a milder, or a sub-acute, melancholia, in which the patient has peculiar worries over his own bodily ills.

Insistent or fixed ideas may or may not be diagnostic of neurasthenia. They are common in melancholia, mania, etc., in the genesis of delusions, and may continue as sequels of such mental storms through the effects of mental habit and association of ideas, etc. While they are more likely to occur in neurasthenia, and thus become a symptom of it, they are sometimes initiated in persons constitutionally sound, and become the cause of neurasthenia by the worry that may attend them. They may directly initiate it, in fact, as a neurasthenic weakening of inhibition, and in some limited disorder of physiological processes as an association psycho-neurosis. The correct diagnosis of ideational disorders is important and valuable as affording indications for prognosis treatment. Hysteria as allied to these affections often has a neurasthenic basis and appears as a complication; and it is peculiarly characterized by the anæsthesia of the special sense.

Treatment.— The diagnosis of the neurasthenic con-

dition having been made, upon physical and mental examination that for special reasons should be thorough in all particulars, the plan of treatment should be carefully laid out. The objective indications will be first considered.

Elimination of waste products is logically a prime element of the treatment. Not only should the alimentary canal be regularly and thoroughly evacuated, and the work of the kidneys be efficient, but the removal of the accumulations of toxic materials stored up in the tissues should be aided. Constipation from intestinal atony, as a frequent symptom of neurasthenia, will itself directly cause nervous irritability, depression, etc., and the functions of the various organs will be generally impaired. This demands a proper regulatiou of the bowels; and all means should be tried before regularly resorting to laxitives, — but they must be used if needed. The milder ones, like compound licorice powder, may be used at first, or the compound rhubarb or cathartic pills. But a cholagogue purgative has often an excellent effect, — one-sixth grain doses of calomel, every hour or half hour, — or five grains of gray powder every hour until action occurs, — or a few doses thus given followed by a saline laxative. A glass of cold or hot water, with perhaps some saline like Carlsbad salts, may be taken at bedtime or in the morning; the hot water especially has a washing-out effect upon the upper part of the intestinal tract, and acts as a solvent upon the contents of the intestines. Brunton[88] says that many cases of nervous irritability, depression and weakness appear like neurasthenia and hypochondria. Nervine tonics, sedatives, etc., are not needed; but for good results you must treat the bowels. Massage of the abdomen is useful, and small enemata of plain warm water, the rule being observed to solicit action at a certain hour every day. Fruit should be taken freely, and a good proportion of solid food when possible. Minute doses of aloin and strychnia, or one-tenth of a grain of aloin alone, or one or two grains of extract of cascara sargrada,[89] regularly after each meal, have a gentle and excellent effect; the morning doses and later those at noon, may be omitted as the patient improves. But the practical rule must be to give what suits the patient in each case.

Elimination by the kidneys is of the first importance. In cases of neurasthenia it is commonly found that the patients drink too little water, which is the best diluent and diuretic. Prescribe pure spring or distilled waters, which may be aërated, — not too much at meals, but between them or half an hour before; this should be done particularly when the urine is scanty and of high specific gravity. As Brunton says, it "tends to wash away the waste products from the cells of which our organs are composed, to clear out the uric acid, urea, and phosphates through our kidneys, and thus prevent renal and vesical calculi, and also to wash out our liver and prevent gall-stones, while it helps to keep the bowels in action." In prescribing the daily consumption of hot water, a slice of lemon in it may overcome the dislike of it. A part of the beneficial effect of milk is doubtless due to increased ingestion of the water it contains, and milk and lime water, or soda-water, may be given to the same effect. Skim milk and whey are good diluents, and best suit some conditions of digestion.

[88] Lancet, June 20, 1891, p. 1365.
[89] This drug will be disappointing if it is not the product of the well-selected and matured plant, and reliably prepared.

Brunton regards the views of Haig, as to the elimination of uric acid, as an important contribution to our knowledge of the subject. These views have already been quoted, to the effect that the production of an excess of uric acid in the body is due to its deficient elimination in the urine; Haig says also that "it may be looked upon as going on to some extent in every one during the best years of nutrition and bodily activity," tending to its accumulation in the tissues. Uric acidæmia is therefore regarded by him and others as a condition that may ordinarily occur apart from the gouty diathesis, and be a source of much nervous disorder, including the feelings of depression, heaviness, drowsiness after meals, disinclination for bodily and mental exertion, sleeplessness, etc., which are the symptoms common to neurasthenia. The periodical attacks of headache, mental depression, etc., are thus accounted for in young people whose storage is less of uric acid, and the indication for treatment is a change from nitrogenous to farinaceous food. The persistence of these mental symptoms in older people indicates the probable need of clearing out the accumulation of uric acid in the tissues, spleen, liver, etc. The taking of alkalies according to the plan of treatment recommended, and the disorders of nutrition, etc., that increase the alkalinity of the blood, make it a solvent of the stored uric acid; this will cause acidæmia, with a relatively slow, high-tension pulse, and the usually accompanying symptoms. It is greatest after meals and in the morning hours before and after breakfast, during the "alkaline tide" of the blood. Coincident with this is the "morning tire," as has been stated. But if acids are given, wines or condiments containing them, or opium and other drugs that act like them, — as nux vomica, iron, nitro-glycerine, nitrite of amyl, — the uric acid is driven out of the blood into the tissues, relaxing arterioles by reducing tension, and improving the circulation. Mercury, by a like action, reduces the excretion of uric acid in urine, producing diuresis. All this is to the temporary relief of the disturbing symptoms, but it is not elimination and they tend to return in a worse degree. If there are exacerbations of headache, with nausea, etc., — for example, a "bilious attack," — give aromatic spirits of ammonia or nux vomica in place of acids; or, when acids fail, opium or mercury in small doses will sometimes succeed in affording the temporary relief then essential. Elimination is probably best effected by a course of salicylate of soda, with an acid mixture in alternate doses for weeks or months, till the daily excretion of uric acid remains for some time at the level of normal formation (1–33) as to urea; at the same time there should be as little of nitrogenous food as is compatible with healthy nutrition. The effect is to remove the cause of the irritative vascular disturbance. Then dieting is the main reliance, to limit the formation and retention of uric acid. Haig recognized the fact that when the nervous system is depressed by fatigue, deficient food, etc., disturbance of function will be produced by a smaller amount of uric acid in the blood than at other times. It is significant that these symptoms, common to neurasthenia and melancholia, are often observed in the latter to be ameliorated along with the return of normal excretion by the kidneys. Reference has been made to Brunton's conjecture that oxaluria indicates the presence of some special poison in the blood. Cases with this symptom are commonly treated in the asylums with nitro-muriatic acid; Wood

reports some interesting cases of impending melancholia successfully treated in this way.[9] Such considerations give new interest to the physiological processes of elimination, and enlarge a special field for investigation into the causes and treatment of the nutritional disorders of neurasthenia.

The excretory action of the skin should receive attention, and it is promoted by bathing and bodily exercise. The neurasthenic do not bear cold bathing well, and its effect upon those who have previously used it to advantage should be observed. The effects of the warm bath should be noted while it is being taken, and afterwards, so that its temperature and duration may be regulated to suit the patient. Tepid and warm baths at night have a sedative and hypnotic effect also, and may be employed two or three times a week, oftener when well borne. The Turkish bath, when judiciously given, is useful in some such cases. The morning sponging with cool water, not more than 20° F. below the temperature of the skin, should be regularly practised. It should be given by the nurse until the patient is strong enough not to need assistance, — then the muscular effort is good in addition to the effect of the rubbing with a coarse towel, which should always follow the bath. At first the temperature of the water may be such as to give only a slight sense of coolness, and later it may gradually be made cooler. The patient should never feel cold or weak after the bath; the test of its being beneficial is the sense of warmth and comfort, or invigoration that it gives. The sitz bath and foot bath have their special indications. Sea-bathing on the northern New England coast is not beneficial to those who are much advanced in neurasthenia; in warmer waters it is often invigorating and useful, and should bear the test of the after-effects.

Menstrual irregularities are often neurasthenic and should be carefully observed and treated, though rarely by drugs. The douche may be used, when indicated, under ordinary rules. Suspension of the flow may be looked upon as conservative. An ordinary flow for the individual is often relatively too much, and should be limited. The patient usually has aggravation of nervous discomfort or severer symptoms at such times, and should be kept in bed from the beginning of the flow, or the day before, until one or more days after. Fluid extract of ergot has sometimes an excellent effect, in five to ten drop doses, three times daily, for two weeks before the event, or all the month. It regulates as well as diminishes the flow. Large hot douches, twice daily, when it is desired to arrest it after one or two days, have been employed with great advantage; two to four are usually sufficient.

(To be continued.)

THE EFFECT OF A MEDICAL LECTURE ON A CLERGYMAN.— At the recent meeting of the New Hampshire Medical Society, Dr. C. P. Frost related an anecdote illustrating the interest developed by Dr. Smith in his lectures on chemistry. In 1810, President Wheelock came from Dr. Smith's lecture-room to evening prayers in the chapel, and in his prayer gave thanks substantially as follows: "O Lord, we thank Thee for the oxygen gas; we thank Thee for the hydrogen gas, and for all the gases. We thank Thee for the cerebrum; we thank Thee for the cerebellum, and for the medulla oblongata."

[9] Therapeutic Gazette, 1885, p. 793.

Original Articles.

PERSONAL OBSERVATIONS ON THE PATHOLOGY AND TREATMENT OF NEURALGIAS OF THE FIFTH PAIR.[1]

BY JAMES J. PUTNAM, M.D.

(Concluded from No. 7, page 160.)

IN one or two cases the intima of the blood-vessels was greatly thickened and the lumen of the vessel encroached upon and even obliterated by a dense tissue containing fibres and nuclei. In one or more large vessels affected in this way, the central mass of tissue appeared to be attached to one portion of the vessel wall, and opposite this the fenestrated membrane, everywhere else perfectly distinct, had entirely disappeared (Fig. 6).

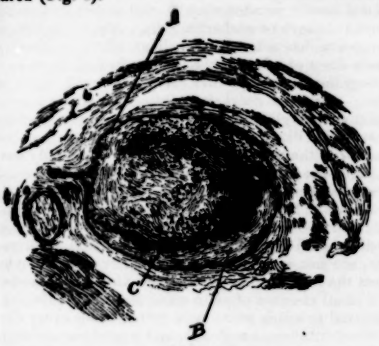

FIG. 6.

Obliterated artery from the connective tissue surrounding the nerve and forming its sheath. A, external limit of artery. B, muscular coat, evidently altered. C, fenestrated membrane. The mass forming the centre of the artery is fibrillated, and contains a number of nuclei, and is continuous with the remaining coats of the artery where the fenestrated membrane seems broken through, and also at other points. Other arteries in the neighborhood of this one, all of them of large size, are in a similar condition.

In two of the nerves the axis cylinder and nerve tubes seem to have undergone various degenerated changes, such as swelling, displacement and destruction (Figs. 4 and 5). The examination of osmic acid preparations of teased fibres leads me to think that these appearances may have been due in part to the rough handling of the nerve during removal, but this certainly could not account for the whole of these parenchymatous changes. All the nerves were removed with a good deal of violence, and yet in most of them these highly marked changes in the nerve tubes were absent.[10] When they were present, on the other hand, their morbid origin was indicated by various collateral signs. Thus, there was a high degree of infiltration of nuclei among the nerve tubes; the axis cylinders had not only been displaced (as by pressure), but were wanting throughout the greater part of whole nerve bundles; while side by side with the immensely distended and altered fibres were others of normal size and structure, and sometimes again others of very small size suggesting newly formed (regenerated) fibres (see Fig. 4).

[1] Read before the Boston Society for Medical Improvement, March 23, 1891.

[10] At the time this paper was read I had not seen Dr. Dana's (Medical Record, May, 1891), in which he says that he did not find much evidence of parenchymatous change.

It is very striking that apparently normal and diseased portions of nerve may lie side by side, that is, so far as the nerve elements themselves are concerned. In one entire fasciculus or portion of a fasciculus, there may be only a few normal looking axis cylinders, or perhaps not one, but only nerve sheaths containing myeline with or without the remains of displaced, swelled or shrunken axis cylinders, while other parts of the fasciculus, or other fasciculi of the same nerve, appear relatively unaffected.

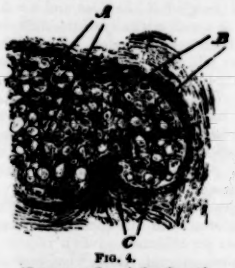

Fig. 4.

[Drawn on smaller scale than the rest.]

Nerve-tubes of larger (A) and smaller (C) size, giving to the section a strikingly mottled look. The large tubes are of several times the normal diameter, and are filled only with granular myaline, sometimes with and sometimes without the remains of altered axis cylinders. The small tubes are apparently perfect in structure, but are smaller than the usual size, and may possibly be newly-formed fibres. Between the nerve-tubes are large numbers of nuclei (B). It is possible that these very striking changes in the nerve-tubes are in part mechanical, but this is not probable. The only mechanical violence used was in removing the nerve; but the absence of signs of pressure is against this; and the presence of the numerous nuclei indicates that inflammatory or degenerative changes have probably occurred.

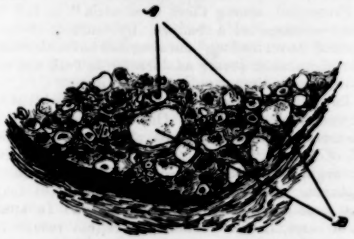

Fig. 5.

Enlarged view of a portion of No. 4. A, normal nerve fibres. B, altered nerve-fibres. Numerous nuclei occupy the space between the fibres.

In some of the specimens small nerve bundles are to be seen running in the very midst of the perineural sheath, near its peripheral border, and the fibres in these bundles are often few in number and separated by thick trabeculæ (Fig. 3). Sometimes no fibres remain. Whether it is proper to look on these bundles as representing the so-called nervi nervorum, which different observers claim to have made out, I do not know, but it is obvious that they are in a position to be painfully compressed by the thickened fibrous tissue of the sheath. In a specimen under the microscope (Fig. 3), a small artery is to be seen lying so close to one of these small bundles that one can easily imagine its pulsations to have been painfully felt. The sheath of this nerve contained an unusual number of small and large arteries and of these small nerve bundles.

The cells found lying in large numbers among the nerve fibres and in the sheath were of several sorts, principally: (*a*) long slender nuclei, parallel with the nerve; (*b*) round and ovoid cells of somewhat different sizes. I looked in vain in one or two of the nerves for cells with the characteristic staining of the so-called Mast-cells. The pieces at my disposal were usually small, and it is possible that my sections do not strictly represent the condition of all parts of the nerves.[11]

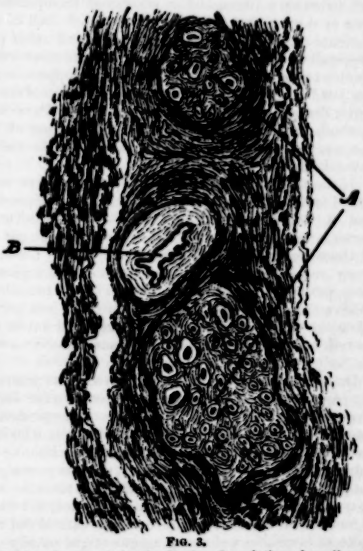

Fig. 3.

Portion of external sheath, showing the relation of small nerve-bundles (A) to the blood-vessels (B), see text. Many of the fibres of the nerve-bundle seem to have been destroyed, and their place taken by connective tissue. The blood-vessels were unusually numerous, and in some of them the intima was much thickened, and even the lumen obliterated by organized tissue.

A few words as to my own experience in the treatment of these neuralgias, and the lessons which the surgical cases seem to me to teach. I shall reverse the usual custom and begin with the surgical aspect of the subject, because resection or other operations seem to me the treatment to which, *in a chronic case*, we ought to turn first, instead of last, as is commonly taught. Successful as other modes of treatment often are, and true as it is that the persistence of a peripheral neuritis is no necessary bar even to the spontaneous cessation of the neuralgia for a longer or shorter time, and that operations sometimes fail to alleviate or alleviate only for a time, yet it is equally true that in a severe and chronic case no treatment can be counted on so confidently as a suitable operation, either to procure relief from pain or to secure the conditions favorable for rapid restoration of the nervous tone and nutritive condition of the patient.

Unless there are strong arguments against an operation, why should we advise the patient to pursue the longer and more painful road to recovery to which

[11] The drawings were made with the camera lucida by Dr. Abbott and Mr. Philip Wynne.

tonics and anodynes point the dubious way? No one has heard the expressions of gratitude of a patient after successful operation, or seen flesh and color return, but he would be glad to hear and see them again.

Is the operation, in skilful hands, really a very serious one?

During the past five years sixteen patients have been operated on at the Massachusetts General Hospital twenty-six times, and at several of the operations two or three nerves have been removed.[12] All of the patients received a considerable measure of relief (see Appendix), and the only untoward results recorded or known to me were that two patients had suppuration of the jaw for a short time, and one, after section of the inferior dental nerve within the mouth, by the Paravicini method, had a curious impairment of the use of the tongue, causing a marked lisp, which, at the end of several years, has not fully passed away.

If the private records of the hospital surgeons were added to this list, the showing would be much improved, and it would, I think, be admitted that an inflamed nerve is usually to be regarded as a thing to be got rid of almost as much as if it were a foreign body; but, as every one knows, a thorough operation often gives a long period of relief when there is good reason to believe that no severe primary neuritis was present, or when the whole of the inflamed part could not be removed, or when more than one branch was involved, but only one removed.

Dr. George R. Fowler, of Brooklyn, in an interesting paper published in the *Annals of Surgery* for 1886, gives a record of eighty-three cases of neurectomy. One patient had slight facial paralysis; one who left the hospital in cold and damp weather, without permission, on the seventh day, free from his neuralgia, but not free from his stitches, died of tetanus; the rest, so far as the operation was concerned, did well. A number of cases of ligature of the carotid did not make so favorable a showing, as one might readily anticipate.

It should be said, in addition, that several of the patients operated on by the surgeons of the Massachusetts General Hospital were in advanced life, and that several of the operations were for removal of the nerves close to the skull.

What indications can we find that can aid us as to the character of the operation?

I have indicated my belief that in most cases of neuralgia two elements are usually present in varying degrees, an irritable condition of the nerve-centres, and some one or more peripheral irritations. To overcome the first of these conditions, it is probably important to cut off, so far as possible, the stream of impulses that fall upon the diseased nerve-centre, whether these come by way of nerves that are themselves inflamed or by way of (contiguous) healthy nerves. I think the operations should, therefore, be both extensive and deep; extensive, so as to include as large a peripheral area as possible, the probability being that it is useful to cut off even the normal peripheral areas that are especially related to the diseased nerve-centre; and deep, in order to get rid of as much as possible of the diseased nerve and its thickened sheath.

[12] Since this paper was first written a number of successful resections at the foramen rotundum and foramen ovale have been made by Drs. Richardson, Mixter and Cabot, and the belief has gained ground that this radical method is really the best.

I have already called attention to the important part probably played by the circulation in the inflamed nerve as a cause of irritation of the nerve bundles ramifying in the sheath. The sheath of the inflamed nerve forms, in fact, an important peripheral area. I will, however, repeat that the irritability of the diseased centre is, after all, probably the essential thing. If this were not so, it is hardly probable that the pain would return with such violence after the regeneration of the cut nerves.

I should be glad if the time and my knowledge allowed me to speak critically of the different operations that have been recommended. I hope, however, that these points will be brought out fully in the discussions. I will only say, that, as the operations in general have come more into favor, and as neurectomy and nerve-stretching have displaced neurotomy, so the deep operations have been, of late, displacing the more superficial operations. It is probable that forcible stretching, or even avulsion, adds something of value to neurectomy, though it introduces an element of slight danger which has been pointed out by Lagrange (case of ulceration of the cornea from avulsion of the infraorbital; no reference given).

An English surgeon, Rose,[13] has recently trephined the skull, and broken up the Gasserian ganglion for neuralgia. The patient had inflammation of the cornea, and lost the eye, but the writer thinks this could be prevented another time.

I did not intend, in speaking highly of operative treatment, to undervalue the other measures, which often surprise us by their action, I cannot enumerate them at length, but must acknowledge my indebtedness to a few.

Prominent among these is aconitia[14] in full doses first recommended I believe, by Gubler; then, the rest and "overfeeding" cure, carried out with sufficient thoroughness to secure an increase in flesh and color. Galvanism is often an invaluable adjuvant.

Two sets of cases have also been reported that have interested me very much. One set, comprising thirty-three cases, collected by Gussenbauer and Pietrzikowski, of Prague,[15] are stated to have been all cured by thorough, mechanical hygienic, and medical treatment of chronic constipation. These observations may at least contain a useful therapeutic hint. In another set of cases, Leslie[16] obtained excellent results from the insufflations of common salt into the nostrils, repeated each half minute for five minutes; and in this connection I would refer to the occasional value of cocaine instilled into the eye in supraorbital neuralgia.

It should never be forgotten, when we are trying to estimate the value of any therapeutic measure, that the pain, even in these severe forms of neuralgia, is liable to remit suddenly, even without treatment, and remain away for a considerable period, in spite of the persistence of neuritis or other causes, and this too even with elderly people, as I have several times witnessed. Any remedy, now, which breaks in on the neuralgic habit is liable to bring about one of these remissions, and although the pain may disappoint the

[13] Lancet, November 1, 1890, p. 914.

[14] Report of the New York Therapeutic Society, New York Medical Journal, 1878, p. 621.
E. C. Seguin: New York Medical Record, 1879.
Emerson: New York Medical Journal, 1878.
Derver: Albany Medical Annals, 1883.
Taylor: Peoria Medical Monthly, 1888–89, p. 250.

[15] Prager Med. Wochenschrift, 1887, p. 370, and 1886; also Cbl. f. Chir., 1886, p. 715.

[16] Edinburgh Medical Journal, 1889–90, vol. xxxv, p. 614.

patient by returning, yet a valuable interval may be gained. Thus, in a favorable case, a few large doses of aconitia may cut short an attack for days or weeks. The "inhibitory" effect of various operations about the face is to be reckoned in the same category; and likewise that of sudden nervous shock; and, last — but not least in importance, because more often available — that from hypnotism. I have not actually used this latter treatment myself, but a number of successful cases are on record.[17]

As an instance of the action of mental shock, the case of Sir John Lawrence may be cited. He had suffered excessively for a long time from facial neuralgia, and was still suffering, when the news of the Indian mutiny was brought to him, with its intense anxieties and calls for unremitting labor. At once the neuralgia disappeared, not to return.

At the time this paper was first written I had not seen Dr. C. L. Dana's article in the *Medical News* of May 16th, in which he describes the changes in some nerves examined by him. Although my observations and those of Schweinitz do not wholly agree with his as to the absence of changes in the nerve-tubes themselves, yet I concur with him in thinking that it is the irritation, not the destruction of the nerve, which causes the pain. With regard to the point which he makes that the absence of anæsthesia is an argument against any considerable degree of nerve degeneration, I cannot concur. The evidence is very strong that so long as a nerve is not wholly destroyed the sensibility of the skin which it supplies may remain normal, for ordinary tests at least, and also that contiguous nerves may do duty for each other.

APPENDIX.

I have, unfortunately, not been able to get late news of the majority of the patients operated on at the hospital, even by correspondence. Such facts as I have are as follows: All were well, or practically well, at the time of their discharge. The pain is not known to have returned in any case where the nerves were cut at the foramenar, but the information only covers periods of from a few months to two years. Of the other cases, one patient is still free from pain after four years; one after two years and a half; one after two years. In two cases the pain is known to have returned, as so often happens, but often a long interval of relief; and, of course, in the cases where more than one operation was performed the pain had returned in the interval.

SMALL SUB-SEROUS FIBROIDS OF UTERUS THE OCCASION OF GREAT INTOLERANCE OF THE BLADDER.[1]

A Case: Operation, Recovery.

BY W. H. BAKER, M.D., BOSTON.

The following case is of interest as showing

(1) The importance of verifying the position of the uterus when determined bimanually, by the passage of the uterine probe.

(2) The necessity of examining, under ether, in a case when the diagnosis is doubtful, or difficult of differentiation, on account of thick or rigid abdominal walls or from the extreme sensitiveness of the pelvic organs.

Miss M. C., thirty-five years of age, a native of New Hampshire, consulted me first May 24, 1890, and gave the following history: Menstruation was established at fourteen years of age, occurring regularly afterwards until four or five years ago, when it began to anticipate the time by three or four days. Dysmenorrhœa was present only each second or third month, but at such times of pain she was obliged to go to bed. The time of each period was four days, and the amount twelve saturated napkins. She generally felt miserably for a week after the flow had ceased. She had had no serious sicknesses during the course of her life. She became run down about five years ago; felt badly all over, as she expressed it. At that time she first consulted a physician, and had been under treatment most of the time since. From leading an active life and exercising much in the open air, riding horseback and walking, she gradually became more and more of an invalid. The suffering, which was greatly intensified by any exercise, consisted of very frequent desire to urinate. There was no dysuria, but the greatest intolerance of the bladder to holding more than a very small amount of urine. This was most troublesome during the day-time when she tried to be on her feet, but was not altogether absent when lying down or when sleeping at night, as she would be awakened four or more times by the distress in the bladder, which was only relieved by urinating. She was practically debarred from engaging in any employment, and had settled down to a quiet semi-invalid life at home. Added to this suffering was a sense of weight in the pelvis, and oftentimes distress in the rectum when in the erect position. Previous treatment had principally been the use of the hot vaginal douche and the support of the uterus by a vaginal pessary. For a period of two years after the pessary was first adjusted she felt much better, all the symptoms being greatly alleviated. After that period of time, however, all her former suffering returned; and although she continued the use of the pessary, she felt that it was an insufficient support, and constantly desired that it be changed, entertaining the hope that thereby she might derive the relief she had previously obtained by such instrument. Finally, the large size of pessary which had been applied caused so much vaginal irritation that she removed it, and consulted me as previously indicated.

On making a vaginal examination, I found that canal much irritated, and on either side near the outlet a small ulcerated surface where the sides of the pessary had imbedded itself. In one month, when I saw her again, by the use of the hot vaginal douche and rest, the vagina had quite recovered itself, and I was able to examine her more thoroughly. Both digitally and bimanually the uterus felt to be in a position of extreme anteflexion of body and neck; but so sensitive was the whole organ, that, although I made a prolonged attempt to pass the uterine probe, I failed utterly in entering the uterine cavity with that instrument, and was obliged to content myself with the bimanual examination, which I was loath to do, inasmuch as the abdominal walls were thick and rigid, allowing only an imperfect palpation of the pelvic inlet. A "Grailly-Hewitt," soft-rubber, anteversion pessary was adjusted, which was well tolerated by the vagina, but which gave her only partial relief from

[1] Read before the Boston Society for Medical Improvement, April 27, 1891.

[17] Frei: Wiener Med. Pr., vol. xxix, 1888, 1889.
Bybring: Internat. Kl. Rundschau, Wien, vol. iii, 1889.
Ann. of the Univ. Med. Sciences, 1889, vol. ii, B. 41; 1890, ii, C. 40.

the intolerance of the bladder. Analysis of the urine showed nothing abnormal.

During my absence in the summer, Dr. Burrage substituted a hard-rubber pessary of the same pattern, which gave her more relief for a time, but in November she presented herself again, suffering from all the former symptoms in a greatly increased degree. I felt that we could no longer be satisfied with the imperfect examination previously made, and suspected from the long continuance of the sensitiveness of what seemed to be the body of the uterus, that it might prove to be an adventitious growth.

On November 18th, an examination being made by the aid of ether, I found the uterus retro-cessed with anteflexion of the cervix, and elongated to an internal depth of three inches, apparently held in its backward position by a body in front and slightly to the left of the uterus. This mass was indistinctly movable from the uterus, being about the size of a hen's egg and of somewhat irregular surface. It was thought to be either an ovary or a pedunculated out-growth of the uterus. The uterus was not freely movable, and the tubes and the ovaries could not be otherwise distinguished.

I advised the operation of cœliotomy, and removal of the growth, at the same time breaking up any adhesions which might be holding the uterus in its malposition, and, if, necessary, stitching the fundus to the abdominal parietes.

January 21, 1891, assisted by Drs. Burrage and Pratt, I operated through an incision in the median line, half way between the umbilicus and pubes, two inches in length, which was subsequently enlarged to three and one-fourth inches. With two fingers in the abdominal cavity both ovaries and tubes were felt to be normal. A growth, apparently a fibroid, was found springing from the anterior surface, and slightly to the left side of the uterus, and quite down to the lower part of the body of that organ. Its pedicle was thick and vascular, perhaps one and one-fourth inches in length and one-half an inch in thickness. The omentum was firmly adherent to the anterior surface of the fibroid. This was with some difficulty peeled off. The pedicle, included in a Spencer-Wells obtuse angled forceps, was ligated with stout braided silk. In tying the ligature about one-third of the pedicle was cut through, and a considerable hæmorrhage ensued; it was controlled by sewing the pedicle through and through with the saddler's stitch, which was now quite down on the uterine tissue; subsequently the pedicle was sewed over and over with a whip stitch. No adhesions were found about the uterus, and the necessity for stitching the uterus forward was not apparent. The abdominal cavity having been washed out with warm water, the abdominal wound was closed with interrupted silver sutures, and the wound dressed with iodoform, collodion, gauze and strapping.

Patient was put to bed in good condition, and her recovery was uneventful. She was able to sit up in two and one-half weeks from the date of the operation, to walk about in three weeks, and was discharged from the hospital in four weeks.

In this case temporary relief was obtained by the use of vaginal supports, it is true; but as the tumor grew, they became inefficient, and her life was made increasingly intolerable by the growing irritability of the bladder. Just what was the nature of the growth in front of the uterus it was impossible to say until the intraperitoneal examination was made; then it at once became evident that, in order to give any permanent relief, entire removal of the fibroid must be accomplished.

The success of the operation is shown in that she now complains of none of her former inconveniences. The desire for urination occurring only three or four times in the twenty-four hours; neither is her rest broken at night as formerly by the desire to empty the bladder. The uterus has resumed its normal position in the pelvis.

I have been led to report this case in full inasmuch as in my experience it is rather exceptional that a small fibroid produces such an intolerance of the bladder or in fact of any of the surrounding organs. Usually their growth is so slow that the surrounding organs became accustomed to their presence, and it is more from their weight, together with the displacements of the uterus and its consequent engorgement thereby induced, that the patient suffers. Reference in this connection is more especially made to subserous fibroids. Much more frequently do we see symptoms of a reflex character, arising from small fibroids of the subserous or even interstitial variety.

Clinical Department.

CASE OF ACUTE PLEURISY WITH LARGE AMOUNT OF EFFUSION.

BY ARTHUR P. PERRY, M.D., JAMAICA PLAIN.

JOHN C., laborer, age twenty-seven years, sent for me on the evening of April 8th last, to relieve a slight cough and difficult breathing, which he had had about ten days. He had worked, as the weather permitted, until five days before my visit, and the day previous had been seen by a physician, who told him he had a cold only and would soon be well.

Patient weighs about 165 pounds; height five feet, ten inches; chest measurement (as taken afterwards) thirty-eight inches, after a full inspiration; pulse 100, rather weak; temperature 100°; respiration 32, labored.

Percussion showed dulness over the upper portion and flatness below the level of the fourth rib on the left side. The resonance over the right chest was increased. On auscultation no respiratory sounds whatever were heard on the left side, and there was almost a total absence of heart sounds, with no impulse. In the right chest the respiratory sounds were increased in volume, and the heart could be heard beating feebly between the right nipple and the sternum.

As all the symptoms indicated an effusion into the pleural cavity, I told him my diagnosis, and proposed aspiration, but not having an aspirator with me, was obliged to wait until the next morning.

The amount of fluid drawn filled the bottle four times, and by actual measurement amounted to 129 fluid ounces. The patient felt a little faint during the early part of the operation, but at the end was so far recovered as to ask if he could go out-doors that day. The next day the heart was found to have returned to nearly its normal position, and the lung had expanded considerably.

About the first of May the patient, by request, visited me in my office. Some fluid had accumulated

since the last examination on April 10th; but he declared he felt well, and was working every day.

Several gentlemen have assured me that this is the largest amount of fluid removed from the pleural cavity at one aspiration of which they have ever heard.

Medical Progress.

REPORT ON DERMATOLOGY.

BY JOHN T. BOWEN, M.D.

ACTINOMYCOSIS OF THE SKIN.

Since Israel, in 1878, established the existence of a parasitic disease in man, that was proved soon after by Ponfick to be identical with the actinomycosis described by Bollinger in cattle, a considerable number of instances of this affection have been reported where the skin was attacked, either alone, or in conjunction with the internal organs. Ponfick has asserted that any portion of the outer integument and of the mucous membrane may afford entrance to the parasite, provided an open door is offered by a loss of tissue. The most frequent seat of the cutaneous affection is the region of the face and jaw, a carious tooth having in many instances proved to be the starting point of infection. No very characteristic clinical appearances are found as a rule, but chronic suppurative processes, with nodules and infiltration of the dermal tissue, serve to suggest the possibility of this affection. The source of infection in cattle is doubtless very frequently to be found in the feed, as Johne and Ponfick have discovered vegetable fibres and grains of corn covered with the characteristic actinomycosis parasites, in the jaws of healthy swine. In man, also, the probabilities point to the view that vegetable matter is the carrier of the parasite, as nearly one-half of the cases have shown primary lesions and fistulæ of the mouth and throat, although the possibility that many of the cases of pulmonary and intestinal disease are due respectively to a direct aspiration and swallowing of the parasite, should not be overlooked. Many of the cases of cutaneous actinomycosis have been shown by operation to be connected with lesions of the internal organs, as the lung and intestine, by fistulæ caused by the outward progress of the disease, yet undoubted instances of the skin's being attacked primarily are on record.

Thus Müller[1] relates the case of a man who had received a splinter in his forefinger, which remaining had been covered in by granulations. Two years later an infiltration occurred at this point, and on examination the parasite of actinomycosis was discovered in the new growth. There is a general belief that the disease in man differs from that in cattle, solely in the addition of a septic process. In cattle a pure granulation tumor alone is present, while in man, besides the granulation tissue, the evidences of suppuration are so marked and constant, that we are forced to regard it as a mixed affection — actinomycosis plus sepsis.

A case of actinomycosis of the face is reported by M. M. Darier and Gautier in the *Annales de Dermatologie et de Syphiligraphie*, for June of this year, which offers, indeed, no new light, but is interesting on account of the small number of cases reported outside of Germany, and which will further serve as a good example of the affection.

A female, twenty-five years of age, a native of Prussia, but an inhabitant of Paris for seven years, where she was employed as a cook, had her first symptoms nine months previously, when she noticed a small subcutaneous nodule in her right cheek, which increased slowly in size, finally involved the cutis, and opened spontaneously, giving exit to a small quantity of pus. Soon afterward other smaller nodules appeared around the part first affected, many of which were opened by incision, or broke, emitting a small amount of pus or blood. The patient was admitted to the Hôpital St. Louis, where the following condition was noted. The whole of the right cheek occupied by a violet red patch, covered in some places with large scales, not raised as a whole, but presenting a half dozen hemispherical elevations, of the diameter of a centimeter, some of them ulcerated at the tip and covered with small crusts. These elevated nodules were found to be soft and fluctuating, and to be seated upon a hard base, which exceeded the limits of the red plaque even, and which was manifestly adherent to the superior maxillary bone. The lower eyelid was the seat of a soft œdematous infiltration. The lesions were somewhat painful, but the patient's general health was excellent. The small tumors were incised, and in the pus obtained, small yellowish-white granules could, with difficulty, be distinguished by the naked eye, which on microscopic examination proved to be the nodules of actinomycosis. They were well seen by simply spreading the pus in a thin layer on a slide, or by adding a little salt solution. Each drop of pus contained about a dozen of the nodules. Of etiological importance in this case may be the fact that nine months previously this patient had had an alveolar abscess of the second upper incisor of the right side, which was the seat of a considerable caries.

The treatment instituted in this case may seem somewhat novel. It was according to the method of M. Gautier, by which a solution of iodide of potash injected into the tumors was decomposed by a current of electricity. Two platinum needles were inserted into the tissues and every two minutes during the operation several drops of the iodide of potash was injected. This treatment proved successful after a good many repetitions, and at last accounts there remained no traces of the lesions beyond a redness with some cicatrization.

DESTRUCTION OF HAIR BY ELECTROLYSIS IN FRANCE.

The destruction of hair by electrolysis was, as is well-known, introduced by Dr. Hardaway, of St. Louis, and remained for some time a distinctly American practice, foreign dermatologists showing little tendency to seriously undertake the operation. That its adoption is becoming now more universal is illustrated by several papers from the pen of Dr. Brocq, the well-known dermatologist of the St. Louis hospital in Paris. Brocq follows essentially in his methods the procedures adopted in this country, but a review of certain points in his writing may prove interesting, even if not acquiesced in by the American of experience.

Brocq uses a battery of twenty-four cells and a finely adjusted galvanometer. His needle is of iridoplatinum and bent at an angle, in order to serve as a guide to the depth which the point has reached, and to facilitate the operation upon parts of the face not

[1] Beitrilge zur Klin. Chirurgie, Bd. iii, Hf. 3, p. 325, 1888.

easy to reach. When the needle has been inserted into the follicle, the patient holds the electrode connected with the positive pole in his hand, while an assistant regulates the current until the galvanometer records the required strength. If there is no assistant, the patient must take care not to complete the circuit until the needle is in place, on account of the pain produced by the repeated attempts that may be necessary before the needle is successfully inserted. Brocq considers that the use of cocaine in ointments and lotions has not very much effect in diminishing the pain. He often uses the following ointment, however,

Hydrochlorate of cocaine	.50
Lanolin	8.
Vaseline	4.
Extract of violet	q. s.

which is rubbed into the part that is to be operated on at three different times, a half hour and a quarter hour before the sitting and at the moment of beginning. The pain he thinks is, by this means, somewhat lessened. The current used is from two to three milliampères for hair that is very fine, or when very sensitive or conspicuous portions of the face are being treated. For medium sized or very stout hairs four to five milliampères may be reached. With regard to the time that the current is allowed to pass, the operator must be the judge, as the necessary skill can be acquired by experience alone. Brocq recommends using a considerable amount of traction with the forceps on hairs situated in conspicuous places. In this way there will be a larger number of recurrences, but one will approach nearer to the exact moment when the bulb is destroyed and there will be no danger of leaving scars. He also advises to wait a few moments and then repeat the traction with the forceps, in case the hair does not come readily at the first trial. As to marks left by the operation, Brocq says they vary according to the numbers and quality of the hairs, according to the individual, the part treated, and the fineness and quality of the integument. One patient will have no trace remaining after five or six days; another will show for several weeks a brown pigmentation, or red points becoming white when the skin is stretched. These last are all that is seen when medium sized hairs are removed. When very stout hairs are treated, for which it is necessary to continue the current for a long time, certain predisposed individuals may exhibit small cicatricial indurations of the size of a pin's head, scarcely or not at all visible, but perceptible to the touch. Often small circular depressions are seen which tend to disappear spontaneously. Brocq regards vaseline, glycerine and cold cream as substances tending to stimulate and increase the growth of the downy hairs, and recommends his patients to content themselves after the operation with a simple starch powder.

He questions whether it would not be better, when a fine growth is appearing on the face of young women, to destroy it before time and repeated epilations have rendered the hairs coarse and thick and much more difficult to treat.

[Probably in no other operative procedure is it more difficult to lay down precise rules than in electrolysis for removing hair. The experience of the operator is of importance, a considerable apprenticeship being absolutely requisite for success. Different operators may accomplish equally good results by following methods quite dissimilar in their minor details. Thus an experienced operator can do the very best work without the aid of a galvanometer, while the beginner needs all possible instruments of precision for his assistance. Little that can be written as to the number of hairs removed at a sitting, is of value. No number should be allotted to a given time, as it depends upon the character of the growth, the irritability of the patient's skin, the courage of the patient, the quickness of the operator, etc. The current of four to five milliampères used by Brocq for the stouter hairs, while perhaps a safe one in experienced hands, should not be attempted by persons of inexperience. Very good work, with a moderate number of recurrences, may be done with one and one-half milliampères, and the reporter's experience leads him to doubt if it is ever wise to exceed two milliampères in cases where the best results are desired. Rep.]

"CABUL LEPROSY."

In an article in *La Tribune Médicale* for July, 1890, Dr. E. Verrier discusses the disease known as "Cabul leprosy," and its relation to syphilis. The article has been rendered into English by Dr. C. W. Cowles, of Hampstead, from whose translation we quote. It seems that in this disease there is a condition of enormous exostosis of the tibia and of the bones of the forearm, arm and face. Soft tumors, adherent to the bone and involving the cutaneous tissues are often found about the articulations of the elbow joint, and also upon the malar bone and the integuments of the cranium, and they are quite as apparent at the beginning of the disease as when it has become more generalized. When these tumors are situated in the skin or in the muscular tissue, they have, at first, an elastic consistency resembling that of a gumma. At a more advanced period the tumors break down and give exit to the products of necrosis of the tissues, including the bone. Around the margins of these ulcers the tissues are "sticky," of a gummatous consistency. On the forehead cicatrices are often noted, where these lesions have left their marks. There are also observed ulcerations of the nasal fossæ, and of the roof of the mouth, the velum of the palate, and caries of the nasal bones. Cases of "Cabul leprosy" where these lesions are dominant, Dr. Verrier regards as nothing more nor less than syphilis. "Scrofula" he regards as sometimes complicating the syphilitic disease, and that it is this association that has contributed to the mistake of regarding the disease as true leprosy. Inasmuch as inoculable sores are rare in Cabul and as one-fourth of those afflicted with Cabul leprosy are infants, he considers heredity to play a chief rôle in the transmission of the disease.

ICHTHYOL VARNISH.

Unna,[1] who has made extensive use of ichthyol in the form of ointments, pastes, ichthyol-collodion and ichthyol-gelatine, recognized the need of an ichthyol varnish that would not have the disadvantages of the collodion and gelatine in being somewhat irritating to an abraded skin, and that would not possess the hygroscopic qualities of the pure drug. He believes that a good many specialists have been less successful in the treatment of rosacea and lupus erythematosus with ichthyol, because they have used the drug in the form of ointments and pastes.

For this purpose he experimented with various substances and found that if starch were added to ichthyol the mixture was not hygroscopic, and that to this mix-

[1] Monatsheft. f. prakt. Derm., Bd. xii. No. 2.

ture albumen must be added in order to keep the starch in suspension. The formula for this ichthyol varnish reads,

Ichthyol	40 parts.
Starch	40 parts.
Sol. albumen	1–1½ parts.
Water, ad.	100 parts.

The starch is first thoroughly mixed with the water, then the ichthyol added and lastly the solution of albumen. Another formula in which carbolic acid is incorporated is:

Ichthyol	25 parts.
Carbolic acid	2.5 parts.
Starch	50 parts.
Water	22.5 parts.

This varnish is intended especially as a dressing in minor surgery, as it dries quickly, and can easily be removed by water. The soluble ichthyol varnish combines all the advantages of the various ichthyol preparations without their disadvantages. It dries quickly and is not dissolved by the perspiration. It is valuable in acne in persons with a very sensitive skin, in rosacea, and in lupus erythematosus. In some forms of eczema and in erysipelas it is of great service.

This varnish is also made the vehicle for other drugs, on the principle that several therapeutic agents of the same class may, with advantage, be united in one prescription. In this way a more powerful effect may be produced, while the disadvantages of the several drugs are lessened. For example, two to five per cent. of chrysarobin may be added to the ichthyol varnish for use upon the face, and used with the same security as chrysarobin-collodion. Certain circumscribed forms of eczema, psoriasis and other affections may be treated by combining pyrogallol, resorcin and sulphur with the ichthyol varnish. It is to be noted that in order to obtain a suitable consistency, an amount of water or oil, equal to that of every new medicament added, should be mixed with the varnish. For this purpose linseed oil is used as a rule.

BULLOUS ERUPTION FROM ANTIPYRINE.[3]

The subject, a man thirty-three years of age, had a history of numerous attacks of rheumatism. Immediately after taking some medicine prescribed by a physician for headache, he was seized with a violent itching of the palms, soles, lips and glans penis, which were soon covered with bullæ as large as a bean, and on palms and soles there also appeared urticarial patches that did not develop into bullæ. This attack, accompanied by slight fever and malaise, lasted four or five days. Four weeks later while suffering from influenza, a precisely similar eruption occurred after a dose of antipyrine, and the same results were observed after taking the same medicine twice during the two months following. Shortly after this he was seized with an acute inflammation of the knee-joint, for which one grain of antipyrine was given. Two hours later the bullous eruption appeared just as before, while the pain in the joint and the headache disappeared. The diagnosis of an antipyrine eruption being highly probable, it was determined to test the matter experimentally, and at 8 o'clock he was given one grain of antipyrine, followed by a half grain at 9 o'clock. At 9½ intense itching in the anal region, at 10, burning sensations of the palms and soles, and at 11, lips greatly reddened and swollen with marked reddening of the gums. Later there appeared erythematous and urticarial patches of palms and feet and upon the glans penis, and by evening the whole face was greatly swollen, conjunctivæ congested, temperature 39.2° C., constitutional disturbance marked. On the following day the lips were still greatly swollen, but the erythema of the face and conjunctival injection had nearly disappeared. Several bullæ as large as a pea were found upon the hard palate. The patches upon the hands, feet and penis remained, and had not entirely disappeared until the expiration of three weeks, and a copious desquamation of the affected portions followed the attack. The points of especial interest in this case are the constant localization of the eruption on lips, gums, hands, feet, and penis, and the concurrent rise of temperature.

[3] Veiel: Naturforscherversammlung, Bremen, 1890.

PURPURA HÆMORRHAGICA.

Numerous attempts have been made of late years to discover the cause of purpura hæmorrhagica, starting with the assumption that we have here to do with a chronic infectious disease. The observations made have not reached a very satisfactory conclusion, however, although Letzerich was able to cultivate a bacillus from the blood of a girl suffering from this disease, which he inoculated upon animals with the result of producing a dilatation of the capillaries with hæmorhagic spots and extravasations. Oddly enough Letzerich himself was taken ill with a tedious attack of purpura hæmorrhagica some three years after these experiments were made, and from his blood the same bacillus could be cultivated.

Kolb's[4] work was performed under the guidance of Dr. Petri, and five cases of purpura hæmorrhagica were obtained as material. Three of these cases belonged to the type described by Henoch as purpura fulminans, which ends fatally in from twenty-four hours to four days, while the remaining two were of the ordinary milder variety, the patients recovering in from two to three weeks.

[A more exact clinical description of these cases would have been valuable, in view of the probability that, under the term purpura, which is strictly speaking a symptom merely, we may include different pathological processes. Rep.]

In these five cases, specimens of blood were first taken from the living subject to determine if a specific agent could be detected by culture or inoculation — but only negative results were obtained. Three of the cases, however, ended fatally and the autopsy in each revealed copious hæmorrhages and extravasations throughout the internal organs. Pieces of the glands, liver, spleen, kidneys, and purpuric patches of the skin were excised, and exhibited in hardened sections a moderately large bacillus with rounded ends, situated chiefly in the vessels, although partly in the interstitial tissue. The fresh tissue served as material for cultivation, and also for experimental inoculation. A large number of animals (405 in all) were used in these experiments and it was proved that in almost all cases purpuric spots and general internal hæmorrhages could be produced, with the constant presence of the bacillus described. Inoculation of pure cultures of the microorganism also gave quite constant results upon animals, guinea-pigs alone proving to be but slightly susceptible. The bacillus was somewhat similar in appearance, staining, and behavior in culture media, to seven

[4] Arbeiten aus dem Kaiserlichen Gesundheits Amte, Bd. vii, Berlin, 1891.

other known varieties, yet distinct points of difference from each of these are pointed out. In order to determine whether the hæmorrhages were dependent wholly upon the bacteria or whether the products of retrograde metamorphosis were not also causative, cultures in large amounts were sterilized and filtered, and inoculations made on animals. The result showed that these fluids also which were free from bacteria, could produce the characteristic hæmorrhages in rabbits and mice, and pathologically the same appearances were revealed.

Kolb concludes that inasmuch as in three pure cases of purpura hæmorrhagica the same bacillus was cultivated, which could produce in different species of animals, a pathological process similar to that in man; and as a bacillus identical with that found in the human body could be cultivated from these inoculated animals, the three requirements of Koch have been fulfilled, and that in these cases he had to do with an affection caused by the bacillus that he has described. He thinks that this bacillus, for which he proposes the name bacillus hæmorrhagicus, will be found to be present in all cases of pure purpura hæmorrhagica.

PATHOLOGY AND TREATMENT OF ALOPECIA AREATA.

Dr. H. Radcliffe Crocker,[1] reading before the British Medical Association on the above subject, reported an analysis of 207 cases of alopecia areata in 10,000 cases of skin disease, indicating a frequency of two per cent.; and of 50 cases occurring from a total of 1,500 in private practice, a proportion of 3.3 per cent. The number of males was slightly greater than that of the females. In hospital practice the greater number were under twenty, while in private practice the largest number were found to be between twenty and forty. Speaking generally, we may say that the disease is most common under twenty years, frequent between twenty and forty, uncommon after forty, and rare after fifty.

After speaking of the controversy between those who advocate the tropho-neurotic and parasitic theories respectively, he declares his position to be with the French, believing that there are both parasitic and non-parasitic cases of alopecia areata. Under the generic term alopecia areata, then, he describes four classes of cases.

Class I. Here he places those cases where the alopecia is universal, and in which the hair does not necessarily come out in patches. This form is often accompanied by changes in or falling off of the nails, and is apt to pursue a rapid course, and to be permanent. Many of these cases have succeeded worry, fright and injuries to the head.

Class II are cases of baldness occurring in one or more patches at the site of an injury or in the course of a recognized nerve.

Class III is the form originally described by Neumann as alopecia circumscripta seu orbicularis. Here the patches are circular and always small in diameter, from a lentil to a pea in diameter, much depressed below the surface, with often a marked decrease in the sensibility. It is a rare form, and the prognosis is unfavorable. The depression of the bald area below the surrounding skin, with the appearances of atrophy, is a marked feature of this form.

These three classes he regards as essentially of a tropho-neurotic character. Collectively they form only a small proportion (five to ten per cent.) of cases classed as alopecia areata.

Class IV is not only the largest by far, but the one most open to discussion as to the origin of the affection, and the writer has come to the conclusion that it is due to a vegetable parasite. The cases occur chiefly in patches from one-half to two inches in diameter, primarily round, but often irregular from the confluence of several patches. They may occur on any part of the scalp, but more commonly on the occipital region. Short hairs about one eighth of an inch long, thicker at the free end than at the point of insertion, may be seen in the more recent cases. In 80 per cent. of Crocker's cases of this class, the health was perfectly good. If this were a neurosis, he considers it unparallelled that it should be (1) a very common disease. (2) Most common in the prime of life. (3) That four-fifths of those affected should be in perfect health otherwise. A large number of cases in the writer's personal experience are then related, where patches of alopecia areata occurred in adults who had been in close contact with cases of tinea tricophytina. In children cases occur which it is impossible to distinguish from alopecia areata clinically, where a direct history of contagion from tinea tricophytina can be discovered. Crocker declares that he has repeatedly seen cases of typical ringworm of the head, which, after being treated for some time, change into smooth bald spots identical with those of alopecia areata, and that tinea tonsurans may present totally bald spots from the beginning. His conclusions are that tinea tonsurans and alopecia areata may be interchangeable in children, while in adults we see practically only one, the bald form, and the question is forced upon us, "Is not alopecia areata in the majority of cases not only non-neurotic, but parasitic, and is not the parasite that of tinea tonsurans?" This would account for the otherwise curious fact that while ringworm of the scalp is so common in children, it disappears after puberty. Crocker believes that the fungus can be demonstrated in recent cases if properly looked for — that it is not *in* the shaft, but *on* it, or on the attached epithelium, and he suggests the possibility that the hair alters in its consistence after puberty, so that the fungus cannot penetrate it. The best way, he thinks, is to pull out a good many of the loose hairs at the border of the area, then to examine them with a lens, and select those hairs which have most root sheath attached. These are soaked in liquor potassæ, and the portions of epidermis attached to the shaft examined. The fungus is always in small foci, and perhaps in only one of several selected hairs. He thinks that in most recent cases its presence can be verified by a sufficiently careful search. It is worthy of notice that alopecia areata is most common when tinea tonsurans is most common, as in England and France.

As to treatment he prefers blistering in the early stages; later, strong parasiticides, as corrosive sublimate in solution. Pilocarpine internally, or under the skin, may be used with advantage.

[Crocker's view that most cases of alopecia areata are caused by the tricophyton tonsurans is not held by the American or any of the foreign schools. Many of the French dermatologists, with M. Besnier at their head, regard alopecia areata (La Pelade) as the result in some cases of a tropho-neurosis, in others as due to a parasite as yet undiscovered. The epidemics of "la Pelade" that occur not infrequently in schools, camps,

[1] Lancet, February 28 and March 7, 1891.

etc., they regard as parasitic in character, but they are unable as yet to demonstrate the specific organism, and separate the affection distinctly from tinea tonsurans. Rep.]

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Regular Meeting, Monday, April 27, 1891, the President, Dr. Frederick I. Knight, in the chair.

Dr. J. W. Elliot read a paper on

APPENDICITIS: A YEAR'S EXPERIENCE IN PRIVATE PRACTICE.[1]

Dr. M. H. Richardson: I have been very much interested in these cases of Dr. Elliot. It seems to me that we do not as yet possess the experience or the knowledge to decide definitely in many cases of this disease. I was very glad when Dr. Elliot again brought up the subject, and I think that all the men who see many of these cases will agree — most all if not all — that we do not know as yet what to do in many of the cases. The subject is, of course, a very prolific one. We are getting everyday more experience, and yet we cannot lay down any fixed rule for treatment. I had the pleasure of listening to Dr. Worcester's brilliant paper, and I agree with Dr. Elliot that no such rule can be followed at the present time as to operate in every case as soon as a diagnosis has been made. My own experience since any general discussion of the subject has taken place here has been in the same general direction as Dr. Elliot's. It has been a sufficiently extensive experience to justify the assertion that I have already made, and I will add to it that not only among the men of the greatest experience in this disease, but among men of moderate experience, great doubt exists. In a large percentage of the cases I have seen in private practice it has been the old story of a moribund patient and a general peritonitis with a gangrenous appendix, — the story of delay and disaster. I refer now to the cases that have occurred among men who have not had a great experience. Quite a number of the cases I have seen have been practically moribund, and have died within a few hours after my visit. In that middle class of cases where there is doubt I do not think it is possible to predict either a recovery or death. Of course if it were possible to predict, we should know exactly what to do. I think those who see large numbers of cases will agree that a case apparently mild may in a short time become a fulminating case. I do not think we can set aside a certain number of cases, and say they are not worth considering surgically, because every case with the cardinal symptoms of appendicitis, no matter how mild, may become in a short time beyond the hope of surgical aid or recovery.

I think Dr. Elliot has laid down as well as can be laid down at the present time the rules or the symptoms by which he is guided. He certainly has expressed himself much better than I could have done. I was glad to hear the stress laid upon the general appearance of the patient. As I have remarked many times in my hospital service, you will have two cases that apparently are alike, if you should describe the cases in words, because you would not be able to see any difference: but just as the experienced eye will tell the difference between two minerals very much alike, or as one could tell the difference between two faces very much alike, so there is an indescribable something which leads us in one case to operate and in another case to delay. The general appearance of the patient, the anxiety, the complexion, a general appearance of serious illness, perhaps the temperature and the pulse and the local symptoms, are alike; but it is, I think by the study of these appearances and symptoms that a man is enabled to decide what to do.

My experience in this disease is now quite large. I have seen in consultation between forty and fifty cases, many of which I have operated upon, and in a larger number I have advised against operation, and I feel to-day not so much in doubt as I did in the beginning, but I still feel in great doubt in a given case as to the best method of treatment. I wish we could lay down a rule by which we might be guided, but I do not believe we can yet lay down a general rule for the treatment of all cases. I do not believe that we ourselves would wish to be treated by any fixed rule of operation in all cases, and I do not believe in the summing up of all cases the mortality would be lessened by indiscriminate operations in all cases. Those who advocate this throw out the mild cases, or at least they say there are a large number of cases in which there is no question whatever of any surgical procedure; but, as I have said, those are just the cases, many of them, of which you cannot predict the ultimate course.

I should like to ask Dr. Elliot if he searches for the appendix in all cases. I have never seen the vermiform appendix yet in any of my operations. I have avoided any extensive searching in cases of circumscribed peritonitis, and have never seen the appendix or had any occasion to remove it. I have never operated where I have regretted it, and I have been fortunate enough never to have regretted advising against operation. Of course, I have been lucky in that respect, because it has happened that all the cases in which I have advised against operation have got well, excluding moribund patients. Many cases have died after operation, but I think even in such cases we had the satisfaction of having given the patient a chance; and after seeing some of the operations I have seen, notably some of Dr. Elliot's cases, I have felt encouraged in operating even in the most desperate conditions, for I have seen one or two of his where recovery has followed an operation where it seemed hardly possible that the patient could recover.

Dr. W. H. Baker: I am very glad Dr. Elliot called attention to the fact that the temperature was not to be relied upon in some of the cases of purulent peritonitis. I remember the experience of years ago where some of the worst cases of purulent peritonitis were unaccompanied by any elevation of temperature. I think the physician who is looking for that symptom would go wrong many times, as Dr. Elliot has shown.

Dr. Elliot: I would say that I by no means make it a rule to excise the appendix. It is often a great deal safer to drain the abscess cavity. But when I look at these appendices which I have excised, with their great sloughing masses, their wide open perforations, their canals often increased in calibre, I realize what an advantage it is to excise the appendix, if it can be done without doing serious damage. In a general way, I think the appendix should be excised in

[1] See Journal, vol. cxxiv, p. 499.

the early operations, because in such cases the adhesions are not strong and are often broken during the operation, in which case the perforated appendix is opened directly into the general abdominal cavity. In the later operations, where a circumscribed abscess has formed, the appendix makes a part of the abscess wall, and should not be removed, as by tearing it out, the gangrenous parts of the intestines are so disturbed that they come in contact with the healthy intestines, and thus cause a spreading of the septic process. I have operated on six cases this year, and have excised the appendix five times.

I feel grateful for Dr. Richardson's sympathy about operating on patients where the only symptom was a bad facial expression. I think any one who has had patients with appendicitis or purulent peritonitis die under his care gets experience with this ghastly expression; and although the temperature and pulse may be practically normal, and sometimes the belly not much swollen, yet the serious condition is evident. I remember one of Dr. Richardson's cases, where pus collected in a perfectly flat belly, and all you could say about the man was that he was going to pieces, there being no symptoms; and at the autopsy pus was found. I think that the sense of dissolution, or this expression of illness without any other symptom you can take hold of, is a thing to be cultivated in these cases. I think it is one of the most subtle and difficult things about the disease.

Dr. Richardson: There is a class of cases that I characterized, the first time I wrote a paper on this subject, as essentially favorable cases, in which there is a fulminating peritonitis, and death in the course of two or three days without any circumscribed collection of pus, with gangrenous appendix, the intestines covered with lymph, — all the symptoms that have been so many times described. In that form I have never operated but once; and in that case the diagnosis of obstruction was made, and the appendix only discovered gangrenous at the autopsy. In that class of cases the only thing to do must be the removal of the appendix and the flushing out of the abdominal cavity. I have seen quite a number of cases of this. The fatal cases which came to autopsy, where the patient when seen was moribund, have been in that class, and that is a class which it seems to me we have to consider more than any other, — a case that is going to die in two or three days, not with the abdomen full of pus, but general septic peritonitis and the nidus of infection in that gangrenous appendix; and if in all those cases one could operate in the first day, and excise the appendix and flush out the abdominal cavity, I have no doubt it would be very good treatment.

My point in regard to taking out the appendix was that, in localized collections of pus, in hunting round for the appendix with the finger, one would run the risk of separating recently formed adhesions, and doing more harm than good, converting a localized peritonitis into a general one; and in localized collections of pus all that is necessary is to drain. If, however, the appendix presents, and can easily be removed without exploring very much, it is a good thing to do.

Dr. W. H. Baker read a paper entitled

SMALL SUB-SEROUS FIBROIDS OF THE UTERUS THE OCCASION OF GREAT INTOLERANCE OF THE BLADDER.[1]

[1] See page 189 of the Journal.

Dr. M. H. Richardson: It is very surprising to me that so small a tumor should cause so much trouble. I have never removed so small a fibroid. I think in none of the abdominal hysterectomies which I have performed has pressure upon the bladder, which must have been very great, caused any such painful symptoms as in this case, and I think it is worth while reporting that so serious a condition of things can be caused by so small a tumor. I suppose the explanation that Dr. Baker has given seems very satisfactory, that the bladder gets tolerant by the slow growth of the tumor. I should like to ask Dr. Baker how long it has been since the operation.

Dr. Baker: About three months.

Dr. Richardson: It is possible that this may be a neurotic manifestation.

Dr. Baker: She is doing very well.

Dr. Richardson: Was there any question in this case of a neurotic tendency? Was she a woman in whom this might be a symptom?

Dr. Baker: I did not see any.

Dr. Cutler showed a specimen of

MYCOSIS PHARYNGIS LEPTOTHRICIA.

Dr. Knight: This preparation I asked Dr. Cutler to bring is one of mycosis of the pharynx, sometimes called mycosis pharyngeus leptothricia. It is only within a few years that it has been recognized that certain cases of what we used to call chronic folliculitis of the pharynx are cases really of mycosis, and have been treated a good deal more successfully since their nature has been recognized. Clinically they are cases of chronic folliculitis, cases where you have not only a cheesy exudation, but a hardened cheese-like exudation coming out from the tonsil, sometimes sticking out much like little spears from all the crypts of the tonsils, and also from the base of the tongue sometimes, sometimes in other parts.

This particular preparation came from the tonsil of a young lady, a singer, who applied to a rather notorious advertiser here, a man who gives public consultations free and treats for pay, who told her that she had syphilis, and she did not know what syphilis was, and went home and asked her mother what syphilis was. She came to me and said she had been told that she had syphilis, but came to the conclusion that she had not it after she was told what it was. This girl suffered very little from it. Her voice remained good, but oftentimes it is a source of irritation which extends with slight provocation to the larynx, and very much impairs the voice.

The proper treatment is the removal, as far as you can, of the exudation, and then cauterizing in each crypt with the galvano-cautery point. That I have done in this case, and it bids fair to effectually stop the process. This particular form of what was formerly known as chronic folliculitis has been known as very obstinate and intractable, and until some such thorough means was taken, as the use of the galvano-cautery, in each individual spot, the treatment was not successful. Within a month or so I have seen a report from the hospital at Heidelberg, in which a gentleman in charge of the clinic there mentions a case in which he prescribed the use of cigarettes. He said he had noticed that nicotine had a very good effect when applied to these things locally; and the next case he had, a young lady, he advised her to take up cigarette smoking, and she smoked cigarettes a few

months and came back cured, but I do not think that would be a very good treatment to recommend.

Dr. Cutler: Leptothrix buccalis consists of rods and threads of different lengths,— some short, others long, but all straight. They are colorless, do not branch, and are generally found closely packed in bundles. Found abundantly about the mouth and teeth. The tartar at the base of the teeth contains them in large numbers. These threads are found in carious teeth, and are supposed by many to be the cause of the diseased condition. This statement admits of doubt, however. Besides being found about the teeth leptothrix is seen, mixed with epithelium from the mouth, on the tongue, and in catarrhal conditions of these parts it is found in abundance. Iodine stains the threads blue; the iodine-iodide of potash stains a blue-red.

Dr. E. H. Bradford showed a specimen of

APPENDICITIS.

The case was operated on during the remission in a healthy laboring man of twenty-five, who had recovered from his third acute attack, and was in good health. The operation found the end of the appendix thoroughly embedded in a mass of adhesions to the small intestines. This was with difficulty freed from the small intestines, and the appendix was removed at an inch from its insertion in the cæcum, where it seemed to be normal. The man made a complete recovery.

Recent Literature.

Les Fonctions du Cerveau: Doctrines de l'Ecole de Strasburg, Doctrines de l'Ecole Italienne. Par Jules Soury. 8vo, pp. xvi, 464. With four illustrations. Paris: Aux Bureaux du Progrès Medical. 1891.

The present volume is a reprint of critical digests that have appeared during the last two years in the *Archives de Neurologie*. About one-fourth of it is devoted to a review of the work of Goltz and his pupils, and the rest to the work of the Italians. At the present day Goltz is the chief opponent of the doctrines of cerebral localization, but he, from his knowledge, his talents, and his thorough and patient work, is worth an army. Soury, however, in his candid and thorough review of Goltz's work, shows that Goltz's own doctrines have furnished against himself decisive proofs in favor of the doctrine of localization; Goltz has himself shown that troubles of mobility and general sensibility are found especially in lesions of the anterior part of the brain, and troubles of special sensibility in lesions of the posterior part. The rest of the book is devoted to a study of the work of the Italians, and the author has accomplished a most praiseworthy task, in thus putting into a compact and accessible form the results of the great and valuable work which has been done in Italy, — a work too much neglected in this country. "The critic must recognize," he says, "the taste for careful observation, the passion for order, the shrinking from extreme solutions, the instinct for the experimental method, and, in brief, the solidity and the sobriety of the Italian genius. . . . It is no more permissible to ignore their work, than to ignore that of the Germans or the English." It may be added that in the study of the functions of the brain, their work takes no mean place in comparison. The Italian doctrines are essentially eclectic, avoiding extremes, trying to reconcile opposing facts, and being based on experiment and clinical and anatomical observation. To the Italians is due the theory that the different functional areas possess, beside a special central region, common areas or zones of radiation where the centres overlap. In the dog the zones of sensory innervation seem to converge into a neutral territory, lesion of which causes impairment of all special and general sensibility. The cortex is the seat of the highest psychical functions, but not of simple sensations and organized motor impulses; the basal ganglia may supply in part the functions of the cortex. Different points of each functional sphere of the cortex sustain almost equivalent relations with the corresponding sense organs, so that substitution between different parts of the same centre is possible. Each functional centre sustains bilateral relations for the corresponding peripheral organs of sight, hearing and smell, but unilateral relations for the sensori-motor sphere. Morphological variations in the nervous elements of the cortex teach nothing as to their functions, but that may be gathered from their prolongations and their anatomical relations. The two types of motor and sensory cells of the cortex are so united and confused that the functions of motion and sensation have a common seat. The special functions of any area are due not to a special difference of nervous elements, but to the nature of the peripheral organ with which they are connected. There is no direct nervous transmission between two cells or groups of cells; the communication must take place through a vast diffuse network, made up of the ultimate ramifications of the axis cylinders. Golgi's musculo-tendinous nervous organs are undoubtedly the peripheral organs of the muscular sense. The activity of the brain, like that of the muscle, is attended, during the period of positive work, by an appreciable decline in the temperature of the brain substance, followed by a rise of temperature in the period of repose. These variations of temperature constitute true thermic oscillations, which correspond to the rhythm of processes of functional disintegration and reintegration of the nervous centres. Brain work is a form of energy, and intelligence has its chemical, thermic and mechanical equivalents. Such, in brief, is the summing-up which Soury gives of the doctrines maintained by the different Italian scientists. As an introduction to their work, and to the work of the Strasburg school, and as a guide to the original memoirs, the present volume merits high praise. We are glad to learn that the author intends to publish similar digests of the doctrines of the schools of Berlin, Vienna and Paris, and we hope he may be led to undertake a similar work for the school of London.

Annales de Sciences Psychiques. Paris: Felix Alcan, editeur. 1891.

This new journal, appearing every two months, is under the direction of Dr. Dariex, and is to be devoted to the various psychical phenomena of a so-called occult type, telepathy, presentiments, hallucinations, etc. Its aim seems to be about the same as that of the *Journal of the Society for Psychical Research*. The first number contains a letter from Richet, stating the objects to be pursued, an article by the editor on the method to be employed in telepathic observations, and a collection of various cases of telepathic hallucinations.

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THE SUPPOSED CURATIVE EFFECT OF OPERATION, *PER SE*.

Under this title, Dr. J. William White, of Philadelphia, contributes a paper to the *Annals of Surgery* for August, 1891, which not only from its subject, but from the great number of authorities quoted, and from the rich experience of the writer, makes an article of interest and importance to both surgeon and physician. The author's attention was first directed to this subject by reason of his experience with the operation of trephining for so-called traumatic epilepsy.

During the past five years, with Dr. D. Hayes Agnew, he has trephined in 15 cases of supposed traumatic epilepsy. All but one recovered from the operation. The patient who perished was an imbecile and a confirmed drunkard as well as an epileptic. Death occurred from suppression of urine, probably secondary to etherization.

In one case a bullet was found imbedded in the brain substance. In another, an irregular portion of the internal table was dissected out from beneath the dura mater to which it was attached by cicatricial adhesions. In another there were projecting spicula of bone on the internal surface of the button removed and the adjacent portions of the skull. In two, marked sclerosis and thickening of the cranium were observed about the field of operation. In the remaining cases nothing abnormal was seen, notwithstanding which, they were, without exception, markedly improved by trephining; in two instances even to the point of apparent cure, no return of symptoms having been observed for eighteen months, and for two years, after operation. In the other seven the results were strikingly favorable, convulsions disappearing for weeks or months, although previously of more than daily occurrence.

The author has, in so far as this is possible, classified the cases in which operation *per se* seemed to be the main factor in bringing about a cure. These cases are divided into three groups in accordance with the anatomical seat of the symptoms, or of the supposed disease. This brings them under the following heads:

(1) Operations for the relief of nervous phenomena, as epilepsy, insanity, paralysis, etc.; (2) Operations for abdominal and pelvic disorders, as peritonitis, tumors, etc.; (3) Miscellaneous operations. This classification is further carried out by grouping together (*a*) Those cases in which nothing whatever was found explanatory of the symptoms; (*b*) Those in which some departure from normal conditions was observed, but was so slight as to be apparently inadequate to explain the symptoms; (*c*) Those cases in which an apparently grave and irremediable condition was disclosed by an exploratory operation, but which notably improved or altogether disappeared after mere inspection or handling, no further surgical interference having been thought justifiable.

Under the heading of "Operations for the Relief of Nervous Phenomena," Dr. White has tabulated, including his own, 154 cases. Many of these are given in detail, and coming as they do from recognized authorities, are of much value.

In 56 cases of trephining for epilepsy nothing abnormal was found to account for the symptoms. Nineteen cases were reported in six months or less after operation; eleven cases were reported from six to twelve months after operation; six cases were reported from one to two years after operation; one was reported eight years after operation.

Twenty-five of these cases were reported as cured; eighteen as improved; in three cases it was mentioned that a relapse occurred later. In 30 cases of ligation of blood-vessels for epilepsy, 14 were reported as cured; 15 as improved; one died seven days after operation. In the fatal case the right common carotid artery was tied. No fit occurred after the operation.

In 10 cases of castration for epilepsy, all were reported as cured. One case was reported four months after operation; four cases were reported more than two years after operation; in five, the time when reported is not mentioned.

In nine cases of tracheotomy for epilepsy, two were reported as cured; six as improved; one as much improved, though death, in this case, followed in two months after the operation.

In 24 cases of removal of the superior cervical ganglia of the sympathetic nerves, six remained well at the end of three years; 10 were improved; five remained unimproved; two died soon after the operation, but not from its direct effect.

In six cases of incision of the scalp for epilepsy, nothing was found to account for the symptoms. Three of these cases were reported as cured at the end of three months or less; one was reported as cured at the end of one year; two were reported as cured at the end of two years; two other cases almost similar, were reported as cured.

Twelve cases of epilepsy are reported as cured by

such operations as stretching of the sciatic nerve, excision of the musculo-cutaneous nerve, cauterization of the larynx, circumcision, application of a seton to the back of the neck, tenotomy of the external recti muscles, burning of the scalp, puncture of the heart, etc.

Thirteen cases of spontaneous or accidental cures of epilepsy are also reported, at a time varying from two months to five years after the traumatism, which was a fall, a burn, a wound, an amputation for intercurrent injury or disease, etc.

Passing from the cerebral to the spinal region, Dr. White cites an illustrative case of his own. A man, aged fifty-five, was attacked on December 25, 1887, with severe pain in his arms and shoulders. A few days later there was weakness of the thighs, spreading rapidly down the legs to the feet, and upward on the body to the nipple line. In eight days there was absolute paralysis of the parts involved, including both sphincters, while at the same time the paralyzed parts became the seat of profound anæsthesia. Girdle pains developed, bed-sores made their appearance, percussion of the spine over the third and fourth vertebræ became painful. The reflexes were exaggerated, and light blows on the head in the direction of the spinal axis gave rise to frightful exacerbations of the girdle pains. In spite of every remedial measure, these symptoms increased in severity for ten months. An exploratory operation was then undertaken. Dr. White removed the spines and laminæ of the first five dorsal vertebræ, opened the slightly thickened dura, separated some firm adhesions to the subjacent pia mater, explored the cord, and having failed to discover any pathological changes, closed the wounds in the dura and soft parts.

The girdle pain had entirely disappeared by the following day; sensation began to return the day after; voluntary motion in the toes after the eighth day; and so one symptom after another disappeared until the patient completely recovered, and is now earning his living by manual labor.

In the list of abdominal and pelvic disorders apparently cured by operation *per se* a number of instructive cases are cited. The experience of Tait, who has more than once drawn attention to the astonishing disappearance of tumors, often of large size, after a mere exploratory incision, and the corroborative testimony of von Mosetig are cited at length. Koenig's analysis of 131 cases of tubercular peritonitis treated by abdominal incision is carefully discussed.

In response to letters of inquiry upon the subject, Dr. White received many communications from prominent operators, the great majority of them containing notes of cases not previously published.

Under the heading of miscellaneous operations the author has given several of very diverse character. First are quoted cases of osteomalacia, cured, after weeks or months of confinement to bed, by either oöphorectomy or Cæsarean section.

Passing to another subject, the question of graduated tenotomy of the eye muscles for the relief of severe nervous symptoms is carefully discussed. The author freely acknowledges the value of tenotomies in badly balanced ocular muscles, but he is none the less convinced that in numbers of instances of reported cures of chronic chorea, petit mal, and even delusional insanity, the effect of the operation *per se* is in large measure the potent cause of the supposed cure. This belief in founded, not alone on theory, but upon the fact that in certain cases of reflex nervous troubles a cessation of the symptoms has followed the tenotomy, although this has not produced perfect equilibrium. Again the relapses which may take place after a perfectly successful series of tenotomies would indicate that the nervous phenomena attributed to the insufficiency, for the relief of which the operations were made, were not correctly so attributed, and that the temporary relief must be ascribed to some other than the restoration of an imperfect balance of the external ocular muscles.

In seeking for a reasonable explanation of the phenomena observed in the above cases, the author has formulated the conditions which are common to nearly all of them. These are: (1) Anæsthesia; (2) psychical influence, or so-called mental impression; (3) relief of tension; (4) reflex action or the "reaction of traumatism." These influences were operative in the majority of cases, although not one of them except the last applies to the whole list.

With the idea that it was conceivable that a disease of the nerve centres, not reached by ordinary drugs, might be affected by agents of such volatility and diffusibility as ether and chloroform, the author instituted a series of observations upon a number of epileptics in various stages of the disease. All other treatment was withdrawn, ether was given to the production of full anæsthesia at intervals of from forty-eight to seventy-two hours. The results were either entirely negative, or in consequence of the withdrawal of their bromides the patients grew worse.

Since in the great majority of cases cited in this paper there were either undoubted symptoms such as are habitually associated with organic disease, or there was demonstrable and unmistakeable evidence of such disease, it is necessary to believe, in considering the psychical influence of operation, that powerful impressions acting upon the emotional or intellectual nature may affect the organic processes of secretion, nutrition, etc., and may arrest pathological changes, and bring about reparative or recuperative action. Cases are cited in which such influences are clearly set forth.

The author holds that the normal equilibrium which we witness between the cerebro-spinal and the sympathetic systems, as respects their influence upon the blood-vessels, is obviously more or less interfered with when the brain transmits a more than wonted impulse, allowing the unrestrained action or paralyzing the influence of the sympathetic vaso-motor nerve. In this relation some curious cases of hypnotism, and some striking examples of the effect of the central nervous system upon the body, are cited.

The opinion is expressed that in many of the cases described there can be little doubt that relief of tension is an important factor in amelioration or cure. If it is assumed that preternatural tension exists in the cranial cavity, this would be relieved to some extent by trephining, and there would be but few exceptions to the rule that in each case something was done which lessened tension in some cavity or organ of the body. There are other cases, however, in which no such relief was obtained, and yet cure resulted from the operation. A diminution of the tension would manifestly alter the blood-supply to any important organ in the body, and with it the nutritive processes, local and general. Beyond this nothing definite can be said, except as it applies to cases of ascites in which, as in cases of hydrarthrosis, one tapping may prove permanently curative, because the original source of irritation and hypersecretion has already disappeared.

Under the head of reflex action, the author includes the "reaction of traumatism," as well as the effects of revulsion and counter-irritation. Verneuil has long since shown that very slight traumatism sometimes excites in the entire economy a general perturbation, and sometimes, by selection of the weak point, a sudden aggravation of lesions that are only slight or have slumbered. This same excitement, usually prejudicial, may occasionally be curative. In the case of spinal surgery above detailed, Dr. White believes that the local shock of the operation was promptly followed by a corresponding reaction in which the vitality of the tissues was raised sufficiently high to determine a return to the normal state. In this relation the reciprocal influence of one portion of the body on another is briefly discussed.

In considering abdominal tumors, attention is called to the possibility of the spontaneous disappearance of such tumors, the relation of this disappearance to the operation being coincidental; cases are cited in point. As to the cure or amelioration of growths thought to be malignant by merely exploratory operation, a long search through the literature of the subject has met with but little success.

The cure of tuberculosis of the peritoneum as the result of exploratory incision is explained on the ground that the removal of ascitic fluid allows the peritoneal surfaces to fall together and to acquire adhesions. The tubercles are then shut in between the coils of intestine, the omentum and the abdominal wall. They are thus surrounded by tissues in a high degree of activity which can now throw around them the limiting zone of young cells and eventually fibrous tissue, which, if the tuberculous process is not too far advanced, may effectually resist it and may cause it to retrograde, the process being analogous to that which we see imperfectly going on around a cancerous growth.

As a result of a study of the subject, the author believes the following conclusions are warranted:

(1) There are large numbers of cases of different grades of severity and varying character which seem to be benefited by operation alone, some of them by almost any operation.

(2) These cases include chiefly epilepsy, certain abdominal tumors, and peritoneal effusions and tubercle, though the improvement in the latter is, perhaps, to be explained on general principles.

(3) Of the possible factors which, by reason of their constancy, must be considered, anæsthesia seems least likely to have been effective. The other three, namely, psychical influence, relief of tension, and reflex action, may enter in varying degrees into the therapeutics of these cases, and taken together, serve to render the occurrence of occasional cures less mysterious.

(4) The theory of accident or coincidence scarcely explains the facts satisfactorily.

INOCULATION OF CANCER.

The official report of the meeting of the French Academy of Medicine, June 23d, which is at hand in the *Bulletin*, contains M. Cornil's presentation of the experiments made by a "foreign" surgeon upon two human subjects to test the possibility of the inoculation of cancer by grafts. The official report varies but little, and that in matters of detail, from the accounts previously received. The experiments, it seems, were made four years ago, a little subsequent to a similar experiment made in Germany by a Dr. Hahn, who announced his results at a meeting of the *Berliner medicinische Gesellschaft*, November 2, 1887. Hahn's experiment was repeated by Professor Bergmann, of Berlin, with similar results, and the subject was again referred to at the meeting of the German Surgical Society, April 25, 1889.

Professor Cornil's communication to the Academy, and the emphatic denunciation by his colleagues of the act which he reported, but did not approve, has excited much comment in France. At about the same time much stir was caused in Germany by a demand made in the public press by a Dr. Leidig, a lawyer, for an explanation from Professors Hahn and Bergmann of their proceedings in regard to the inoculation of carcinomatous patients with particles of cancer in places not previously diseased, as already reported two and four years ago. So fierce a fire of indignation was kindled by this, that the German Minister of Education found it necessary to intervene and enforce the demand for some answer to Leidig's charges. As yet no answer has appeared, although Professor Bergmann is reported — we know not how truly — as maintaining the justifiability and propriety of the experiments as made by Dr. Hahn and himself. The *Deutsche medicinische Wochenschrift*, July 23d, contains, however, some remarks on the subject by Dr. Hermann Frank, who was assistant under Hahn at the time the grafts were made, which may perhaps be regarded as representing the form which a statement from Professors Bergmann and Hahn might take if one were made. Professor Ewald also, in the *Berliner klinische Woch-*

enschrift of July 18th, contributes a letter, of which the following are extracts:

"We have not to enter here into a discussion of the question as to the scientific result of the experiments and their importance for the cure and prophylaxis of carcinoma, and especially for the technique of the operation. On the other hand, we do not hesitate to declare that we wish to see such experiments on human beings, however important the questions on which they bear may be, performed, if at all, only by those whose scientific name and unquestionable humanity afford a guarantee that no harm whatever can accrue to the patients in question, and who accept the entire responsibility for this. The much-discussed communications of Messrs. Hahn and von Bergmann were made with all publicity, both in scientific associations and in the medical press. The names of these gentlemen afford every guarantee that the fundamental ethical principles of medical action were not violated in any way in the cases in question."

The Germans certainly seem to have acted with more circumspection in their operations than the "foreign surgeon" reported by Cornil, who had *no* regard for circumspection or medical ethics, even the most rudimentary. The patients in Paris seem not to have been at all in a hopeless condition, and the grafting was done, without consent, whilst the patients were anæsthetized.

From an ethical point of view, as well as from that of common humanity, the French experiments deserve the condemnation which was instantly meted out to them. The German experiments, however, seem to rest upon a very different plane. The experiments were performed with the full consent and understanding of the patients, whose condition was not rendered in any sense more unfavorable by the operation. There is certainly, as has been claimed by the Germans, an enormous difference between the conduct of the anonymous surgeon and that of Messrs. Bergmann and Hahn, which had practically evoked no criticism from the profession until dragged into notoriety by a layman. Whatever may be thought of the propriety of these experiments, they are certainly valuable from a scientific point of view. Although we gain from them no additional knowledge as to the parasitic origin of cancer, the point has been definitely settled that fragments of cancerous tissue, when allowed to remain in contact with healthy tissues, may reproduce the disease, and the experiments emphasize the immense importance of taking every precaution during an operation to avoid exposing the living tissues to the juices or cells of the morbid growth which the surgeon is attempting to remove. This is a matter which hitherto has hardly been called to the notice of the surgical world.

Although we are not disposed to place the experiments of our German confrères in the same category with those of the unknown enthusiast whose zeal overcame his discretion and his humanity, we, nevertheless, feel called upon to caution scientific investigators that in dealing with human beings they are treading upon dangerous ground, even when acting with the patient's consent, and that they should not be blinded as to their duties towards the individual in their efforts to confer a boon on suffering humanity.

MEDICAL NOTES.

The Congress of Hygiene. — The International Congress of Hygiene closed on Monday, after a long discussion as to the next place of meeting. The congress finally decided in favor of Buda-Pesth.

Bogus Medical Diplomas. — The Wisconsin State Medical Board has discovered that the Northwest is being flooded with fraudulent medical diplomas, purporting to be issued by the University of Victoria at Montreal. Fifty of these diplomas have been found in Wisconsin and South Dakota.

The Population of France. — According to the last census the population of France was 38,095,150, including foreigners, which shows an increase of 208,584 over that of 1886.

Fatalities on English Railways. — The railway fatalities during the course of last year have been returned at 1076 killed, and 4721 injured. The average of the fatalities is one in every seven millions of passengers carried.

Prescriptions for Sale. — In connection with the question of the ownership of a prescription given by a physician to his patient, the *Lancet* copies the following advertisement from a newspaper. "Kidneys and Bladder. — Gentleman recently cured by noted titled physician (can be verified) will send fullest particulars and copy of the great specialist's 5 guinea prescription on receipt of 3s. 6d. Inexpensive remedies."

Special Railroad Fares to Washington for the Meeting of the Congress of Physicians and Surgeons. — The Trunk lines, the New York and Boston lines, the Southern Passenger Association, and the Central Traffic Association will transport persons from points on their lines to Washington and return at the price of one and one-third the regular fare on the following conditions: (1) There must be an attendance at the meeting of not less than one hundred persons holding special certificates. (2) The going ticket must be purchased within three days before the opening date of the meeting. (3) Each person availing himself of the concession must pay full first-class fare going to the meeting, and must obtain a certificate from the agent of whom the ticket is purchased. (4) Those holding such certificates, when countersigned by the proper officer at the Congress, can obtain return tickets at one-third the highest limited fare. Certificates are not transferable, and the return tickets secured upon certificates are not transferable. If any of them are sold or transferred, they must be redeemed at the highest first-class rate by the person making such sale or transfer. No refund of

fare will be made on account of any person failing to obtain a certificate. Those who wish to avail themselves of this method of obtaining reduction in fares, should present themselves at the office for certificates and tickets at least thirty minutes before departure of trains. It is absolutely necessary for each passenger before starting to obtain a certificate from the agent of whom the going ticket is purchased, otherwise he can obtain no reduction in the return fare. There will be no stop-over privileges on the return tickets, which must always be by the same route as the going ticket. Members may obtain tickets on these conditions for their wives and members of their families, as well as themselves.

Dr. Samuel S. Adams, 1632 K Street, Washington, D. C., in charge of railroad matters, wishes to be notified by members, without delay, if they intend to avail themselves of this method of obtaining reduction in fare, and also whether they expect to be accompanied by any members of their family who will also desire to avail themselves of such reduction. Early in September the Committee will inform them by circular, as to whether one hundred persons or more have sent notice that they will avail themselves of this method of obtaining reduction, and will obtain special certificates for the purpose. In case there should not be one hundred persons who indicate their intention of doing this, only the ordinary reduction of rates on round-trip excursion tickets can be obtained by those going to the Congress.

The New Explosives.— Workmen employed in manufacturing the new explosive melinite, says the *British Medical Journal*, are liable to present serious symptoms of poisoning. The earlier symptoms are itching of the conjunctiva, loss of appetite, cough, and sometimes hæmoptysis. The patient then begins to suffer from severe asthmatic attacks, during which the heart's action becomes very rapid. The face, hands and hair are stained yellow, and picric acid is found in the urine also. In one man who died of intercurrent influenza, parenchymatous nephritis was found after death, and picric acid was present in the liver. The part of the process of manufacture which produces these effects is that in which carbolic acid is added to nitric acid; nitrous fumes are liberated, and at the same time, owing to the heating of the mixture, some picric acid is volatilized.

Cholera in Calcutta.— From Calcutta for the week ending May 30th, 45 deaths from cholera were reported; for the week ending June 6th, 4 deaths. The weekly death-rate of Calcutta during the first quarter of the year, varied from 26.5 to 57.2 to 1,000 inhabitants; for Madras, 32.7 to 41.3; for Bombay, 24.9 to 32.8. The increased death-rate at Calcutta is to be ascribed partly to a fatal fever and partly to cholera. The latter disease received considerable accessions from the numbers of pilgrims who resorted to the city for the celebration of the twenty-seven-year religious festival. It prevailed chiefly among the pilgrims. At Calcutta the total number of deaths from cholera during the months of January, February and March, was 810, while the average number for the same period during the past ten years, was 455.

A Verdict against a Physician.— In an English town recently, two boys were found trespassing in a garden. The proprietor, who was a doctor, took them to his surgery, and by way of punishment, painted their faces with lunar caustic, producing a representation of a moustache and an imperial. The boys were then released. On their arrival home their faces were dressed with oil, but nevertheless, they complained very much on the following day of pain, and one of the boys was sent back from his work as his employer objected very much to his facial adornment. The parents afterward brought an action against the doctor. Medical evidence as to the nature of the injuries was given, and the doctor was fined five shillings, with costs.

Miscellany.

THE INFLUENCE OF INTESTINAL ANTISEPSIS IN THE TOLERANCE OF CERTAIN DRUGS.

Féré has observed the favorable effect of intestinal antisepsis in persons who are taking continued doses of bromide of potassium, in causing the disappearance of the disturbances attributed to its accumulation, and in particular the cutaneous manifestations.[1] The antisepsis has been persevered in for nine months, and though the patients take daily one drachm of naphthol and half a drachm of salicylate of bismuth, no annoyance has been experienced. The relative tolerance of these drugs is therefore considerable. It would appear that one may regard as absolute the benefits which they confer on those taking bromide of potassium. There are several persons who have taken as much as half an ounce of the bromide daily, not only without injury to their general health, but with great advantage to their convulsive attacks. But borax, which has been employed in epilepsy, causes also gastric disturbance and eruptions. Gowers has shown that it may occasion an outburst of psoriasis, and Féré has seen eczema show itself. These eruptions may appear when doses of fifteen or twenty grains are prescribed, yet occur more frequently and with greater intensity if a drachm or a drachm and a half be given daily. But in the case of two persons, without stopping the borax, which acted satisfactorily on the seizures, a generalized eczematous eruption disappeared in course of a few days when the naphthol and salicylate of bismuth in the doses mentioned were prescribed. In a third patient, the cure of the boric eruption was obtained by administration of the salicylate of naphthol (Bétol) in the dose of seven and a half grains daily. Before he used these antiseptic substances he never obtained the cure of the boric eruptions unless it was discontinued, and the same with those due to bromide. It is probable that this effect of intestinal antisepsis in the tolerance of drugs is not limited to those named, but may be had recourse to under other circumstances, and in particular against drug eruptions combined with gastro-intestinal disturbance of toxic origin.

[1] Edinburgh Medical Journal, August.

A CASE OF ARBITRATION.

Last week we took occasion to note the result of a recent trial for malpractice, says the *Journal of the American Medical Association*, and on account of its fairness and justice published the decision of the appellate judge who heard the case.[1] This week we note another instance in which suit was brought against one of the most prominent physicians in this city, and by consent submitted to a board of three physicians chosen to act as arbitrators. A large amount of testimony was heard, the trial occupying an entire week. In the finding the arbitrators unanimously decided that the defendant was not guilty as charged by the plaintiff. The plaintiff alleging that the defendant had improperly diagnosed and treated the case. The arbitrators found the defendant's diagnosis to be correct and the treatment in perfect accord with the laws of medical science.

The method of settling disputes by arbitration is one commonly adopted by merchants and others engaged in the common business affairs of life, and is highly satisfactory to all concerned except the attorneys. This is the first instance within our knowledge where this plan of settlement has been adopted in a case where an individual believed himself unskilfully treated by a physician.

A NEW METHOD OF PRODUCING LOCAL ANÆSTHESIA.[2]

Dr. Wiesendenger describes in the *Journal für Zahnheilkunde* a new method of producing anæsthesia by the application of cold, the characteristic feature of which is that it is not the cold-producing agent which touches the desired part, but a metallic tube or chamber which is cooled by carbonic acid. The cold may, according to the requirements of the case, be regulated from the temperature of cold water to one sufficiently low to cauterise. The first symptom of this artificial cold is anæmia of the cellular tissue, producing a slight sensation of burning, which is followed by anæsthesia, which lasts from one to two minutes and then disappears without any ill effects. As the instrument may be manufactured of almost any shape, it is evident that this new method may be used for a variety of purposes. The simple turning of a tap will regulate the stream of carbonic acid to any degree of temperature down to four degrees Fahrenheit. No moisture is produced. In using this cold for the purposes of cauterizing, the surgeon has the advantage of producing anæsthesia at the same time. When applying it to any of the internal cavities, such as the mouth, it is necessary to have the parts carefully dried, as the tissues would otherwise adhere to the instrument. Dr. Kummel applied the method in the case of a boy in the Maria Hospital, at Hamburg, with such complete success that the boy looked on without moving a muscle while a deep incision of twelve centimetres in length was made in his thigh. Other gases which can be brought into a fluid state may be used in place of carbonic acid. The carbonic acid which has been used for the purposes of anæsthesia may be led into a vessel which has been tested to a pressure of three atmospheres, and is provided with a manometer and safety valve, whence it could be used as a motor agent or for preserving food. An iron bottle of fluid carbonic acid at a pressure of fifty atmospheres is sufficient for fifty operations,—and costs but a dollar or two. The instrument for the application of cold to the tissues costs about eight dollars.

[1] See page 178 of the Journal.
[2] Lancet, August 1st.

QUESTIONS ASKED AT EXAMINATIONS IN MEDICINE.

In a letter[1] criticising the questions asked by the New Jersey State Medical Examining Board, Dr. H. C. Wood calls attention to the dangers to medical education which may result from absurd questions on examination papers. A student generally knows what kind of questions he is likely to be obliged to answer, and prepares himself accordingly.

State medical examining boards must exert great influence upon teaching faculties, and there always is danger that medical schools shall prepare men for examining boards rather than for practice of medicine. It, therefore, behooves examining boards to take great care that their questions have close relations to practical medicine, and especially to modern practical medicine.

The questions asked are of such a character that, if this examination is to be the type, one of two things must happen: thoroughly trained graduates of medical schools of the first class must either fail altogether, or at least go to the bottom of the list, or else medical colleges will have to strive to make mediæval lumberattics of the heads of their students, much to the disgrace of American medicine and the detriment of American communities. Dr. Wood affirms that, although he is an editor of various editions of the "United States Dispensatory," and the author of a text-book on therapeutics, not only could he not, offhand, answer the questions asked in materia medica and therapeutics, but that he would be ashamed of himself if he could.

On the one hand a candidate might be thoroughly familiar with almost any one of the high-class modern treatises of therapeutics and not be able to answer these questions, whilst on the other hand these questions could be answered by one who had no valuable knowledge of practical therapeutics.

For instance, he says, "Take Question I: What is dialyzed iron, and how is it prepared? Dialyzed iron is a worthless preparation of iron, which has never been recognized by the United States Pharmacopœia, and is, I believe, no longer used by physicians who are any way near abreast of the times. In my lecture I simply mention it as a pharmaceutical curiosity that is worthless. It seems to me a first principle of examinations by medical boards should be that attention must be confined to officinal preparations. If the candidate is to be asked a lot of foolish questions upon every kind of preparation, invented by some perhaps semi-addled pharmaceutical brain, how is he to gain any knowledge? He must be forever running after the chaff that is blown away by his teachers.

"Then again, Question III: How many practical doctors can give the specific gravity of chloroform, and what use would it be to them if they could?

"Question IV: Give the formula and mode of making camphorated tincture of opium. If there were a candidate for graduation in the University of Pennsylvania who could answer this question, I would cer-

[1] University Medical Magazine, July.

tainly examine him most severely to see whether he had not grasped at the shadow and lost the substance of true knowledge. Our men are all taught that the strength of paregoric in opium is two grains to the ounce, that it contains some camphor; and that is all that it is necessary to know about its materia medica or pharmacy.

"Question V: Give the formula of the compound cathartic pill. I doubt whether there can be found a doctor in Philadelphia, in sufficient repute to have a practice of three thousand dollars a year, that could answer this question: to know the effect of this conglomeration of cathartics is what the medical practitioner needs. Again, why should a doctor be required 'to describe infusion, decoction, maceration and digestion,' and not one word asked about the physiological or remedial action of such remedies as opium, quinine, alcohol, digitalis, mercury, arsenic, veratrum viride, aconite, strychnine, nitrites, cathartics, tonics, emetics, or almost any other drug of any value? Indeed, the only drug whose general effect upon the human system is inquired into is one that is not officinal."

THERAPEUTIC NOTES.

Sulphonal is regarded as one of the most reliable and safest hypnotics; but that there is a certain amount of danger, was shown by Bresslauer.[1] The patients were lunatics, and had been taking the drug for a considerable time in good doses, and borne it well until symptoms of disturbance set in, these being great constipation, dark-brown urine, slow, or in some cases rapid but feeble pulse, discolored patches resembling purpura on the limbs, and great prostration. In several cases which ended fatally, the cause of death was heart-failure, with œdema of the lungs.

A Ready Method of Making Glycerin Suppositories:[2]

℞	Stearic acid	5 gm.
	Carbonate of sodium (crystallized) .	2.7 gm.
	Glycerin	120 to 150 gm. M.

The stearic acid in powder is warmed, and the carbonate of soda added with a little water and glycerin. The rest of the glycerin is then warmed and added, and the mass cooled in moulds.

Dermatol. — Heinz and Liebrecht[3] have given the name dermatol to the basic gallate of bismuth, which is said to be a fine, odorless, insoluble, saffron-yellow, non-hygroscopic powder, unchangeable by air or light. The remedy has been used with good results as a substitute for iodoform in surgical, gynecological and dermatological practice. It commends itself as an innocuous, sedative, antiseptic drying powder.

Valerianate of Antipyrin. — The following formula[4] may be used to prepare this salt, which is of value in certain nervous cases:

℞	Antipyrin.	gr. xxviij.
	Aq. destillat.	q. s. ad fl. sol.
	Ft. sol. et adde	
	Acidi valerianici . . .	gtt. xv. M.

Shake well and stand aside to allow the salt to crystalize.

[1] Lancet, April 4th.
[2] Medicine Moderne, July 9th.
[3] Berliner klin. Wochenschrift, June 15th.
[4] Chemist and Druggist.

Valerianate of Antipyrin and Quinine. — Sochaczewski gives the following as the best method of preparation:[5] Dissolve 10 gm. of valerianate of quinine in a sufficient quantity of 90 per cent. alcohol to give a thoroughly saturated solution. Dissolve 10 gm. of antipyrin in the smallest possible quantity of distilled water. Mix the solutions in a crystallizing dish and apply heat, being careful that it does not go beyond 122°. The crystals form and no sub-product is obtained.

Correspondence.

"MIRACLES AND MEDICINE" — A REPLY.

Magnolia, Mass., August 14, 1891.

Mr. Editor: — In your number for July 30th is a letter from Prof. Thomas Dwight, M.D., upon your editorial notice of my recent paper, "Miracles and Medicine," which seems to call for some reply.

I pass the abuse contained in its preface. Such phrases as "gross misrepresentation," "absolutely untrustworthy," "absolutely false statements," "glaring misstatements," "bitterly prejudiced and unjust," and the like, can hardly fail to strike the thoughtful reader as much more like the hysterics of a disquieted zealot than the judgments of a fair critic; and I take up at once the three or four statements which he singles out from the hundreds contained in the two chapters to which he refers.[1]

The first of these which he attacks is that "the School of Salerno was held in aversion by multitudes of strict churchmen;" and to this fact, which is well known to every unprejudiced student of medical history, he opposes the following statement and argument: "This was unlikely, but not impossible. The school was founded by the Benedictines, who certainly were considered strict churchmen." This statement and argument give us at once a test both of the doctor's accuracy and his logic. First, as to his accuracy. If there is one thing in the history of medical instruction which is settled, it is that the Benedictines did *not* found the School of Salerno. There was an old claim to that effect, which probably arose at the neighboring monasteries of Monte Cassino and La Cava. Sprengel carelessly admitted it into his history of medicine about the end of the last century, and sundry compilers have followed it since; but, now that the matter has been carefully investigated, every leading authority, whether Catholic, Protestant, or purely scientific, has abandoned it. Hæser and Baas, the most eminent historians of medicine in Germany; Daremberg, Director of the Mazarin Library, the foremost recent authority in France; Renzi, eminent in Italy; and, finally, Dr. Payne, of St. Thomas's Hospital, in his admirable article on medicine in the latest edition of the "Encyclopedia Britannica," — all these declare this theory to be without foundation. The words of Dr. Payne are as follows: "It has by recent researches been clearly established that the celebrated *Schola Salernitana* was a purely secular institution. . . . All that can with certainty be said is, that a school or collection of schools gradually grew up in which especially medicine, but, also, in a subordinate degree, law and philosophy were taught."

Nor is this all: the blunder which Professor Dwight makes in his zeal as a champion of the church is exposed by no less a personage than Father Denifle, sub-archivist of the Vatican, the latest and greatest among Roman Catholic historians of the European universities, who says that he is "forced to confess that the beginnings of the School of Salerno remain veiled in darkness," and that "it is impossible to say whether its origin was clerical or lay."[2]

[1] The articles are, "New Chapters in the Warfare of Science." Popular Science Monthly, May and June, 1891.
[2] See Denifle, Die Entstehung der Universitäten, p. 232. For Daremberg, see his La Medicine, pp. 132, 133. See also Hæser, Baas, Renzi, *et al.*

[5] American Journal of Pharmacy, August.

So much for the professor's accuracy: next, to his logic. Grant that all these leading modern authorities are wrong and that the professor's mere *ipse dixit* overrides all the proofs they can cite; what conclusion may we draw? The conclusion which the professor draws is as follows: The Benedictines founded the School of Salerno; the Benedictines were strict churchmen: *argal*, "Mr. White is guilty of gross misrepresentation" when he says that "The School of Salerno was held in aversion by multitudes of strict churchmen." There is no need to discuss such reasoning; — surely any Harvard Sophomore chopping logic like this would be plucked at once.

So much for the professor's accuracy and logic. I now take his next criticism as an exhibition of his fairness. My statement was, that "Pope Innocent III, early in the 13th century, forbade physicians, under pain of excommunication, to undertake medical treatment without calling in ecclesiastical advice." Professor Dwight attacks this statement, first, by a quibble, saying, "In point of fact, what is referred to was not done by Innocent III, but by the Fourth Council of the Lateran during his reign." I submit to the candid reader that this reply of the professor indicates either disingenuousness, or ignorance of the history referred to. For nothing is more usual or more just among historical writers than to attribute important church decrees to the Popes, who carried them through, even though they were passed upon, as a matter of form, by a Council. For example, the future historian will certainly, on this principle, attribute the Infallibility dogma to Pius IX. How much more natural, then, to attribute the decree above-mentioned to Pope Innocent III. He was the most powerful pontiff who ever sat in the chair of St. Peter, and, with the possible exception of Gregory VII, the greatest. He not only called the Fourth Lateran Council, but he presided over it, in his own city, at his own basilica, to carry out his own policy, in accordance with his own programme, as every scholar of church history well knows. As well say that the Battles of the Wilderness were not fought by General Grant, but by the military councils he called to receive his orders; or that the Emancipation Proclamation should not bear the name of Abraham Lincoln, but those of his cabinet who considered his draught and revised it. Very naturally, then, does the professor, after indulging in this small piece of casuistry, dismiss his own statement as "a detail of little consequence."

He next goes on to complain that my statement gave "an entirely false impression"; and he says "What was decreed was that a physician, on being called to a case, should advise the patient to attend to the state of his conscience, that is, to send for a confessor; but this in no way implied that the priest was to interfere with the treatment of the case." Here again the professor shows himself either unacquainted with his authorities or exceedingly disingenuous. The context of the canon, while it shows that this ecclesiastical advice was nominally for the prescription of *spiritual* remedies, shows just as clearly that these remedies were expected to help *the body*. This is explicitly stated as a ground for the canon: "*Cum infirmitas corporalis nonnunquam ex peccato provenial*" — "Since bodily infirmity sometimes arises from sin," it begins, the physician of souls should be called, "so that, after provision has been made for the sick man's spiritual care, there may more wholesomely follow the remedy of bodily medicine, *since when the cause ceases the effect ceases.*[3]

Here, then, is my whole contention: the mediæval theology attributed disease largely to human sin, which brought upon the patient the wrath of God or the malice of Satan; hence though the Church authorities were forced to recognize the medical profession, their constant effort was to keep it subordinated to the priestly function. The *Agnus Dei* and fetiches of every sort in the vast repertory of "Pastoral Medicine," were constantly urged upon the faithful by every means, from the voice of Pope Paul II down; and this, of course, interfered constantly and greatly with the evolution of scientific medicine. I feel like thanking the professor for enabling me to bring out this matter so clearly.

Dr. Dwight's next attempts to show that I am wrong as to the penalty inflicted on a physician for not calling in a priest, and he urges that it "was not excommunication, but prohibition to enter a church, which was a very different thing from excommunication in those days." This is a nice point, and in splitting this particular hair, the professor is half right and half wrong; half right, because the penalty, technically, is as he has stated; and half wrong, because exclusion from the church, "in those days," was *not* "a very different thing from excommunication": it was in any case a very serious calamity, and must lead directly into excommunication, if the sinning physician did not confess and do penance. The penalty was thus the incipient stage of excommunication; it must have been ruinous to the business of any physician who incurred it.

But the doctor is welcome to all the advantage he gains from this exquisitely minute point of casuistry. For, taking the case as he leaves it, can any medical practitioner fail to see what was involved in the church penalty? What must have been the status of scientific medicine when theologians solemnly endeavored to force every physician, in every case, to postpone every attempt at rational cure until a priest had been called in to apply "pastoral medicine," whether the little wax *Agnus Dei*, which Pope Paul II. insisted was of such use in obstetrics, or water in which St. Remy's ring had been dipped, so useful in fevers, or any other of the ten thousand fetiches in vogue during the "Ages of Faith."

But Dr. Dwight calls attention to another part of the canon, which orders that the "physician should advise no remedy for the food of the body that might be to the injury of the soul," and says, "This, indeed, is a check on medicine, but a most salutary one." The doctor's reading must have been limited, indeed, if he really thinks this theological check "salutary." For theologians in those days thought many things "to the injury of the soul" which all physicians think absolutely accessary. For example, St. Nilus, St. Ambrose, St. Gregory of Tours, and a multitude of other great theologians, thought taking any medicine at all "an injury to the soul"; and they held this view because taking medicine involves a preference of human over divine methods of cure. Let me give the doctor one theological statement on this point, from a greater authority than any one of the above, an authority, not only sainted, but infallible in matters of faith and morals, Pope Gregory the Great. He tells us: "The precepts of medicine are thoroughly contrary to sacred knowledge; they recall us from fasting; they forbid study; they withdraw us from meditation. Therefore, whoever gives himself up to physicians denies himself to himself."[4]

Such are among the things "to the injury of the soul:" the doctor is quite right; the anathema and excommunication at the end of the chapter he cites, might easily, by a zealous theologian, be applied to these.

The doctor next takes up the case of Vesalius. I had attributed a considerable part in the events which drove him into exile to ecclesiastical hostility, and, in doing so, followed such leading authorities as Boerhaave, Albinus, Paré, Languet, Hæser, Baas, Kingsley, McRae, and many others. Against the well-considered judgments of all these the professor puts — his own, as follows: "The talk of Vesalius having been driven to exile and death is absurd." To bolster up this *ex cathedra* judgment he follows it with sundry statements which will astonish any competent historical scholar by their vast and varied misinformation. He tells us that Vesalius, "so far from being oppressed by the Church, flourished in Italy and Spain, the two countries where she was strongest." Here the doctor yokes together a misstatement and what looks much like a piece

[3] Ut postquam fuerit infirmo de spirituali salute provisum, ad corporalis medicinæ remedium salubrius procedatur, cum causa cessante cessat effectus.

[4] See in the Canon Law, under "*De Consecratione*," (paragraph) *Medicinæ præcepta divinæ sunt cognitioni contraria*, CXXI.; and, for the whole passage cited, Poly., 1–3, tit. 29; *Item, Gregorius in expositione beati* Job, lib. 30, c. 27. For the utterances of St. Nilus, Gregory of Tours, and others to same effect, see authorities cited in Popular Science Monthly.

of ignorance. *First.* How Vesalius "flourished in Spain" is seen by the fact that Vesalius himself complained that in Spain he could not obtain a subject for dissection, not even a skull; *secondly*, it is misleading to say that Italy was one of "the two countries in which the Church was strongest," — so far as the country outside the States of the Church was concerned. The weakness of the Papacy in keeping down hostile opinion in various parts of Italy was a frequent taunt throughout Europe during the Middle Ages. Dante bears witness to this feeling. In Germany, during the Reformation, it constantly appears. Martin Luther pointed one of his most bitter diatribes with this acknowledged fact; and, in our own time, Guizot, a historian pre-eminently fair toward the older Church, mentions the widespread hostility of Italy to the Papacy as a cause why the Crusaders who passed through that country became less devoted to the Church. The doctor dwells with unction upon the fact that Vesalius professed anatomy at Padua, Bologna and Pisa, evidently thinking that this proves him to have been on good terms with the Church! It really raises rather a presumption against any such harmony. Those Universities were constantly restive under theological and ecclesiastical interference, and not unfrequently preferred a man who had braved the Church, in order to advance his own department of science, over a candidate who carried ecclesiastical favor at the expense of his science: this is exactly why so many men of note in these same universities of Padua and Pisa afterward stood so firmly by Galileo.

The doctor next ventures an explanation of his own, saying, "He (Vesalius) no doubt met with great opposition, but probably chiefly from his own profession." Now, I had myself called attention to this jealousy among the devotees of ultra-conservative methods in the medical profession, as a fact which rendered clerical opposition all the more likely. For there is nothing better known in the relations between theology and medicine than that the theological and ecclesiastical powers have steadily shown a strong disposition to ally themselves with the party opposing progress in medical science. The history of inoculation, vaccination, and even of the use of anæsthetics in obstetrical cases, abundantly proves this; and, not only in Roman Catholic, but in Protestant countries. These reasons, then, which the doctor gives for disbelieving in clerical interference against Vesalius are really reasons for believing it.

But the climax of the doctor's learning is reached in the following triumphant statement: "Be that as it may: it is certain that, at Jerusalem, he (Vesalius) received letters from the Senate of Venice, offering him the professorship of anatomy at Padua, which disposes effectually of Dr. White's statements about his being driven to exile and death." Is Dr. Dwight so ignorant then, not only of the general history he expounds to us, but even of the history of his own profession, as not to know that Vesalius's call by the Senate of Venice makes for my contention and against his? Has he never heard of the long struggles of the Venetian Senate through the Middle Ages and afterward with the Roman Curia on the question of commerce with infidels? Does he not know that, time and again, not only the Senate, but individuals at Venice, braved the Papal authority on this and other points? Has he never heard how the Venetian Senate circumvented the Roman power in the matter of the interdicts? Did he never hear of Father Paul Sarpi, "Theologian of Venice," who braved the Papacy and was unflinchingly backed by the Senate? and how when Father Paul was left for dead by the emissaries of Paul V, the Senate stood by him all the more firmly, and how they made it treason for a priest to read a papal bull publicly without their previous authorization? And, on this very point, has he never heard how, as early as 1308, the Venetian Senate braved theological feeling by giving permission for a stated number of dissections each year, and, a little later, called Mondinus to make them? As a matter of fact, then, the calling of Vesalius to succeed Fallopius by the Senate of Venice, so far from "disposing effectually of Dr. White's statements," raises a presumption that Vesalius was a man after the Venetian Senate's own heart, — a man who investigated anatomy and taught it by the best methods, despite theological tradition and ecclesiastical opposition.

Dr. Dwight next wheels into place what he evidently considers his heaviest piece of artillery, — with the usual prelude of hysterics, such as "glaring misstatement," "absolute untrustworthiness," "utterly false," and the like.

My statement which brings out these frantic utterances is that "Boniface VIII prohibited dissection as sacrilege"; and the doctor proceeds to give the text of the decree "*De sepulturis*," and to interpret it correctly, saying, "It forbids the eviscerating and boiling the bodies of the dead for the purpose of bringing the bones home to the country of the departed.[5] He then goes on to say, "Neither in this decree, nor anywhere else, so far as I have been able to learn, is there any prohibition of dissection."

Now let me ask, What does the professor think was Pope Boniface's reason for issuing a special decretal declaring that persons taking the flesh from skeletons under the circumstances named, should be "by the very act excommunicated"? Why denounce so terrible a penalty against so small an offence? No one can suppose that Boniface thus "dealt damnation round the land" for his own amusement or out of sheer wantonness. There are but two reasons which can possibly be assigned. The first is, that the Crusaders might not be burdened by carrying the bones of dead leaders; but this is disproved at once by two facts: first, it does not apply to Crusaders any more than to others; and secondly, the Crusaders were distinctly authorized to bring back the bodies of their dead, if they brought them back whole, and did not cut them up for easier transportation. The only other reason then is, that the decretal enforced, developed and made specific, the great and well-known theological opposition to the dissection of human bodies.

Regarding this general subject, let me quote the main passage among those which have so excited my critic:

"Other developments of thought in the church were hardly less fatal to the evolution of medical science. First of these was a widespread Egyptian and Oriental theory, mainly transmitted through the Jewish sacred books, as to the unlawfulness of meddling with the bodies of the dead. And when to this was added the mystic idea of the human body as the temple of the Holy Ghost, and a dread of interfering with it lest some hindrance might result to its final resurrection, there came an addition to the mysterious reasons which forbade men to pursue anatomy by means of dissection. Tertullian denounced the anatomist Herophilus as a butcher; St. Augustine spoke of anatomists generally in similar terms. The threat of excommunication launched by Pope Boniface VIII, against those guilty of dissection, was simply a development of this feeling."[6]

Now, if Professor Dwight will look into the third edition of Hæser, he will see the connection between this bull of Pope Boniface and the general theological hostility to dissection. He will find that the usual manner of freeing the skeleton for easy transportation was to cut the flesh from the bones, using the boiling as an auxiliary process. Hence it is that all authorities of note — until Professor Dwight — have considered Pope Boniface's bull as virtually levelled at all dissections. It is a simple argument *a fortiori*. If a man's body might not be cut apart in order that it should be brought back to holy ground in which reposed those dearest to him, how much less might anatomists cut up both flesh and bones to feed a curiosity and advance a science against which such great churchmen as St. Nilus, St. Ambrose, St. Gregory of Tours, St. Bernard, and a multitude of lesser lights had protested. These historians reasoned just as men did in England in the last century; when the penalty of death was denounced against any person stealing five shillings, they took it for granted that it

[5] For the Decretal "De Sepulturis" see the Corp. Jur. Canonici at end, among the extravagantes.

[6] White: "New Chapters in the Warfare of Science, Miracles and Medicine," Popular Science Monthly for May, 1891.

was equally severe against any person stealing twenty shillings.

Yet in a small, technical way, Professor Dwight is correct, and Hæser, in his last edition, to stop the mouths of the gainsayers, concedes thus much; but the fact remains that this bull of Pope Boniface was part of that theological hostility to dissection which lasted in the Church over fifteen hundred years.

If there were "no such opposition to dissection," how can the professor explain the fact that sundry universities, in order to enjoy the benefits of anatomical demonstrations, once a year took pains to secure permission of the ruling Pope, as did the University of Tübingen from Sixtus II in 1482 — or from rulers so independent of the Pope as Emperor Frederick II, who, though the greatest enemy the mediæval papacy ever had, only ventured in 1238 to give permission that the body of a dead criminal might be dissected once in five years; or from bodies as bold as the Senate of Venice which, in the 14th century, allowed one dissection a year.[7]

And finally, Professor Dwight says: "As to Dr. White's second conclusion, that 'in proportion as the grasp of theology upon education tightened medicine declined, and in proportion as that grasp was relaxed medicine has developed,' I have something to say."

I will give this "something" of the professor in his own words: "The schools of Salerno, Padua, Rome, Naples, Pavia and Pisa show that the country where anatomy flourished, was just where the grasp of theology was strong."

We have already seen that only Dr. Dwight's want of knowledge regarding the history of medical schools and medical science could excuse him for framing this sentence. It was exactly in the great majority of these schools that theological authority was at times weakest, and it was exactly at such times that medicine as well as other sciences made the greatest leaps forward. Strange as it may seem to the doctor, there were universities in France and Germany where theological control of science was far stronger than in most of those he has named in Italy. Any student in the historical seminary at Harvard will tell him that theological pressure at the University of Padua was, as a rule, nothing in comparison with that at the University of Ingolstadt.

At the centres of Italian thought, whenever there was some local power strong enough to hold the ecclesiastical authority in check, we have such researches as those of Sarpi in physiology at Venice; of Galileo in astronomy at Padua, Pisa and Florence; and of De Dominis in physics at Venice and elsewhere.

And now let me make one concluding remark in reference to Professor Dwight's attempt to arouse sectarian hatred by conveying the idea that I am animated by hostility to the Roman Catholic Church. Nothing can be more contrary to fact. During the twenty years in which the historical evolution of various sciences has been the favorite study of my leisure hours, I have sought to find and to state, simply THE TRUTH. So far from feeling hostility toward the church of which the professor is a member, I have omitted no opportunity to show the good side of its work. I have brought out from its annals every ennobling example I could find in its dealings with science; I have dwelt at length upon its beneficent agency in establishing hospitals; I have shown how many monks, despite theological opposition, did much to advance medicine and surgery; I have, while showing the evil results of theological opposition to vaccination, held up the Catholic clergy of Montreal to admiration for their conduct in the ship-fever period; I have done the same thing regarding the heroic conduct of Bishop Belzance during the plague at Marseilles; I have rendered all honor to Cardinal Wiseman for his attitude in favor of scientific geology, as against Protestant fanatics like Dean Cockburn and Mellor Browne; I have called especial attention to the brave and Christian conduct of Pope Clement VI, in endeavoring to ward off popular fanaticism throughout Europe from the Jews, and have, more than once, even at the risk of provoking Protestant hostility, called attention to the far better excuse for persecution by the Roman Catholic Church than any which can be put forth for persecutions by Protestanism.

True, I have never warped history; not even to "save souls." My belief is that the first thing for any man to do, is to make his soul worth saving, and that the next thing is to have faith that all souls worth saving will be saved.

It would be strange indeed if one seeking to develop the history of nearly a score of sciences, who makes no claim to be a *specialist* in any of them, should not here and there fall into error. Fair criticism, therefore, no matter how severe, by specialists or others, which shall enable me to rectify my text in the minutest point, I welcome heartily; and my greatest disappointment in this whole correspondence has been to find that Professor Dwight, after all the noisy proclamations of his preface, has shown neither any such familiarity with the history of his own science, nor any such power of reasoning upon what he does know, as will warrant me in accepting him as a competent critic.

I am, sir, very truly yours,

ANDREW D. WHITE.

[7] For these and other examples see Hæser, Lehrbuch, Vol. I, pp. 733 and 746; also the "Cartulaire de l'Université de Montpellier," Montpellier, 1890, Vol. I, pp. 569, 570, 572, 573, 678, 679; also, Littré, p. 319.

RECORD OF MORTALITY

For the Week ending Saturday, August 8, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Scarlet fever.	Diphtheria and croup.
New York	1,515,301	763	380	32.76	9.62	21.24	3.25	3.12
Chicago	1,089,850	—	—	—	—	—	—	—
Philadelphia	1,046,964	479	227	29.40	10.50	21.00	1.05	3.78
Brooklyn	806,343	440	257	32.20	8.05	24.61	2.30	3.91
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	209	108	29.76	11 04	25.92	—	1.44
Baltimore	434,439	—	—	—	—	—	—	—
Cincinnati	296,908	113	49	21.36	7.12	10.68	.48	3.56
Cleveland	262,000	—	—	—	—	—	—	—
Pittsburg	240,000	98	58	41.82	9.18	21.42	—	5.10
Milwaukee	240,000	118	76	39.95	8.50	24.65	.85	7.65
Washington	230,392	121	62	34.86	10.79	23.24	—	4.15
Nashville	76,168	39	19	35 84	7.68	20.48	—	—
Charleston	65,163	—	—	—	—	—	—	—
Portland	36,425	21	10	38.08	23.80	38.08	—	—
Worcester	84,655	35	20	48.62	2.86	45.76	—	2.86
Lowell	77,696	48	25	37.44	6.24	33.28	—	—
Fall River	74,398	47	35	48.99	6.39	46.86	2.13	—
Cambridge	70,028	22	16	43.50	—	39.15	4.35	—
Lynn	55,727	26	17	7.70	11.55	—	—	—
Lawrence	44,654	—	—	—	—	—	—	—
Springfield	44,179	20	10	20.00	10.00	20.00	—	—
New Bedford	40,733	25	18	12.00	—	12.00	—	—
Salem	30,801	17	9	35.28	—	35.28	—	—
Chelsea	27,909	18	11	28.88	11.11	28,88	—	—
Haverhill	27,412	19	12	31.56	10.52	15.78	10.52	—
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	10	5	40.00	10.00	20.00	—	—
Gloucester	24,651	2	1	—	—	—	—	—
Newton	24,379	7	3	—	—	—	—	—
Malden	23,031	13	9	23.07	7.69	23.07	—	—
Fitchburg	22,037	9	6	33.33	—	33.33	—	—
Waltham	18,707	7	3	42.84	14.28	14.28	—	—
Pittsfield	17,281	—	—	—	—	—	—	—
Quincy	16,723	7	4	28.56	—	28.56	—	—
Newburyport	13,947	5	2	20.00	—	20.00	—	—
Medford	11,079	5	2	—	—	—	—	—
Clinton	10,424	—	—	—	—	—	—	—
Hyde Park	10,193	4	2	50.00	25.00	50.00	—	—
Peabody	10,158	3	2	33.33	—	33.33	—	—

Deaths reported 2,741: under five years of age 1,458; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 883, consumption 250, acute lung diseases 154, diarrhœal diseases 643, diphtheria and croup 87, scarlet fever 46, typhoid fever 41, whooping-cough 36, measles 11, malarial fever 9, cerebro-spinal meningitis 8.

From typhoid fever Philadelphia 9, New York 8, Pittsburgh 6, Brooklyn 4, Boston, Cincinnati and Washington 3 each, Nashville and Lowell 2 each, Lynn 1. From whooping-cough Pittsburgh 9, Milwaukee 7, Philadelphia 5, New York, Washington and Nashville 3 each, Boston and Cincinnati 2 each, Brooklyn and Lynn 1 each. From measles New York 8, Philadelphia, Milwaukee and Waltham 1 each. From malarial fever New York 5, Philadelphia 2, Brooklyn and Nashville 1 each.

METEOROLOGICAL RECORD,

For the week ending August 8, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S.. 2	29.74	69	75	62	85	68	76	S.W.	N.W.	6	3	O.	F.	.28
M.. 3	30.00	66	75	58	63	70	66	N.W.	S.	10	9	C.	F.	
T.. 4	30.12	66	70	62	72	90	81	N.W.	N.E.	4	7	F.	O.	
W. 5	30.18	64	69	58	82	90	86	N.	S.E.	4	4	O.	O.	
T.. 6	30.14	68	74	62	76	63	70	W.	S.W.	6	9	O.	C.	.26
F.. 7	30.03	73	84	61	60	81	72	S.W.	S.	8	8	C.	O.	.14
S.. 8	29.95	74	86	62	69	58	63	N.W.	E.	8	3	C.	C.	.22
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 8, 1891, TO AUGUST 14, 1891.

Assistant Surgeon Theodore F. DeWitt, U. S. A., granted sick leave of absence for thirty days.

Captain John O. Skinner, assistant surgeon, assigned to duty at Fort Clark, Tex.

Major Alfred C. Girard, surgeon, U. S. A., relieved from duty at Fort Niagara, N. Y., and ordered to Fort Sheridan, Ill., for duty.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 15, 1891.

J. Baker, passed assistant surgeon, detached from U. S. S. "Palos," and authorized to delay reporting in the United States for six months.

J. S. Sayre, passed assistant surgeon, detached from the U. S. S. "Ranger," and ordered to the U. S. S. "Palos."

V. C. B. Means, passed assistant surgeon, ordered to the New York Naval Hospital, September 1st.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING AUGUST 8, 1891.

Purviance, George, surgeon. Detailed as chairman Board of Examiners. August 8, 1891.

Sawtelle. H. W., surgeon. To proceed to Portland, Me., for special duty. August 3, 1891.

Godfrey, John, surgeon. To represent the service at Seventh International Congress of Hygiene and Demography. July 25, 1891. Detailed as member Board of Examiners. August 8, 1891.

Irwin, Fairfax, surgeon. Detailed as recorder Board of Examiners. August 8, 1891.

Mead, F. W., surgeon. Granted leave of absence for thirty days. July 30, 1891.

Carter, H. R, passed assistant surgeon. Granted leave of absence for thirty days. August 8, 1891.

Carmichael, D. A , passed assistant surgeon. Granted leave of absence for thirty days. August 3, 1891.

Pettus, W. J., passed assistant surgeon. To proceed to Wilmington, N. C., for temporary duty. July 31, 1891.

Perry, J. C., assistant surgeon. Granted leave of absence for twenty-seven days. July 28, 1891.

EXAMINATION OF CANDIDATES FOR MARINE-HOSPITAL SERVICE.

Washington, D. C., August 12, 1891.

A board of surgeons for the examination of candidates for admission into the Marine-Hospital Service will be convened at the United States Marine Hospital, St. Louis, Mo., October 12, 1891.

Candidates for examination should make application to the Surgeon-General, United States Marine-Hospital Service, Washington, D. C., as early as practicable, and should enclose testimonials from at least two reputable citizens, preferably physicians, as to their professional and moral character. No person will be considered eligible for examination whose age is less than twenty-one, or more than thirty years, or who suffers from any physical defect which would be liable to impair his efficiency or incapacitate him from duty. The candidate must be a graduate of a medical college of good standing, as evidence of which his diploma should be submitted to the board.

Walter Wyman, *Supervising Surgeon-General, M. H. S.*

DEATHS.

Thomas L. Smith, M.D., U. S. N., died at Brooklyn, August 14th, at the age of ninety-one years. For more than forty years Dr. Smith did active service in the medical corps of the United States Navy. He was born in Orange, N. J., in 1800, and graduated in 1822 from the College of Physicians and Surgeons, New York. On March 28, 1828, he received the commission of Surgeon's Mate (now called Assistant Surgeon) from President John Quincy Adams, and began his naval career in the frigate Hudson in 1830, going to Brazil. In 1837 President Andrew Jackson gave Dr. Smith the commission of Surgeon. From 1847 to 1849 he was the Surgeon of the New York Navy Yard. In 1850 he went to China on the Saratoga, and was made the Fleet Surgeon of Commodore Perry's Japan expedition. In 1854 he was again in the New York Navy Yard, and remained there for four years. In 1859 he was Fleet Surgeon under Commodore Inman of the African squadron. He spent two years in the Mediterranean, and returned home to take charge of the New York Naval Hospital, a position which he held until 1865. During the years 1869 and 1870 he was for the third time in the navy yard, and in 1871 was retired with the commission of Medical Director with the relative rank of Commodore.

William Cogswell, M.D., M.M.S. Præses, died in Bradford, August 15th, aged seventy-two. He was born at Atkinson, N. H., and graduated from Dartmouth College Medical School. He began the practice of medicine at Georgetown, Mass., in 1845, and six years later moved to Bradford. He was President of the Massachusetts Medical Society in 1876, and later President of the Essex North District Society. He was a Member of the Governor's Council in 1877. He was also President of the Atkinson Academy Association and a Trustee of the Haverhill Hospital at the time of his death. He was twice appointed Medical Examiner. He served in the war as Regimental Surgeon.

John J. Cochran, M.D., Assistant Surgeon U. S A., died at St. Luke's Hospital, New York City, N. Y., August 6, 1891.

Andrew M. Mills, M.D., of Newark, N. J , died August 11th, aged fifty-five.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the Medical Society of the State of California, Session of 1891.

Resorcin as an Antipyretic. By W. Carroll Chapman, M.D., of Louisville, Ky.

The Influence of Diet on the Growth of Hair. By E. D. Mapother, M.D. Reprint. 1891.

Practical Intestinal Surgery. By Fred. B. Robinson, B.S., M.D. Vol. II. Detroit: George S. Davis. 1891.

Tenth Annual Announcement and Catalogue of the Women's Medical College of Baltimore for the Session 1891-92.

The University Marine Biological Association. Laboratories and Aquaria Located at Sea Isle City, N. J. Philadelphia. 1891.

A Clinical Report on Intravenous Saline Infusion in the Wards of the New Orleans Charity Hospital, from June, 1888, to June, 1891. By Rudolph Matas, M.D. Reprint. 1891.

Fifty-first Annual Announcement and Catalogue of the Missouri Medical College, and Tenth Annual Announcement of the St. Louis Post-Graduate School of Medicine. Session of 1891-92.

The Pocket Anatomist. Founded upon Gray. By C. Henri Leonard, A.M., M.D. Fourteenth revised edition, containing Dissection Hints and Visceral Anatomy. Detroit: The Illustrated Medical Journal Co. 1891.

Stories of a Country Doctor. By Willis P. King, M.D., Assistant Chief Surgeon of the Missouri Pacific Railway Co., Lecturer on Orthopedic Surgery and Clinical Surgery in the University Medical College of Kansas City, etc. With illustrations by T. A. Fitzgerald. Second edition. Philadelphia: A. L. Hummel, M.D. 1891.

Lecture.

NEURASTHENIA AND ITS MENTAL SYMPTOMS.[1]

THE SHATTUCK LECTURE FOR 1891.

BY EDWARD COWLES, M.D., SOMERVILLE.

(Concluded from No. 8, page 186.)

Nutrition, as the main element of the process of repair, demands careful attention. All the food should be given that the digestive powers will bear, it being remembered that they are weakened with the other functions. Easily digested articles may be required for a time, but avoid slops if the patient can possibly take solid food. Ignore a little dyspepsia as not always requiring drugs; it will disappear as the patient gains in strength. Milk, fish, eggs, vegetables, fruit in abundance, and farinaceous articles, are the main reliance, noting any special difficulty there may be in the digestion of starchy foods.

A variety of plain meats is not contraindicated, except that nitrogenous articles should be limited in the treatment of uric acidæmia. Haig mentions that Lange successfully treated certain conditions of periodical depression from this cause, by a diminution of meat foods, etc.; and Broadbent used the milk diet with success in the frequent association of mental depression with high tension of the pulse. Sugar and starch must sometimes be avoided; give cream, malt, etc., and good butter may be freely used, when increase of weight is indicated; weigh the patient regularly, every month at least. A tablespoonful of malt and the same of whiskey or rum, in milk, is a good addition to the light meal that must be taken when there is much acid dyspepsia. One-half drachm doses of aromatic spirits of ammonia, at each meal, are useful in this condition.

Give soups, and prescribe water for its value in nutritional processes, as well as a diluent and diuretic. Milk, eggs, good beef tea, porridges of Mellin's Food, with the addition of peptonized beef-powder, etc., afford a variety for luncheons between meals, and at bed-time. In the long interval between this and breakfast, especially when the patient is wakeful by night, a glass of milk or the like, and better if warmed, is most useful in anticipation of the morning tire. The significant symptom of neurasthenia is an important index also for general treatment. For this condition, give on awaking a glass of warm beef tea, or of milk, with a spoonful of whiskey or rum, and it will lessen the "misery." As a rule, however, stimulants should be but little used. In the weaker cases, with much dyspeptic disorder, the regular milk diet, as much as can be borne, and frequent feeding, may be employed along with the "rest-treatment." At the beginning of the treatment, a precise plan of dieting should be written out, with the prescription for each of the fixed hours for meals. Require the nurse, if there is one, to keep an exact record of what is taken, along with the clinical chart and other notes.

Rest, as a prime requisite, should be at first absolute and continuous, or partial. The first is appropriate when there is general exhaustion, or conditions of body that admit of it as an aid in improving the general nutrition for the relief of local neurasthenia. It is contraindicated in the graver degrees of depression, and especially of irritable restlessness and agitation. Then it must be modified, and some degree of partial rest may be employed. The point is to get as much rest as possible for the patient, until he has acquired some storage of energy, to permit of its use within physiological limits, and to relieve the distressing sensations that are the basis of the lowered emotional tone. Get all the rest possible without increasing the irritation. In some cases the regulation time of six weeks is enough for the absolute rest; sometimes many months of partial rest are required. There seems to be no rule except careful trial. In the bed-cases the time seems to be indicated by a positive gain in weight and improved quietude in feeling; then it may be necessary that exercise should be urged upon the patient.

Exercise, properly regulated, is essential; it should be begun gently and increased gradually, in all cases; in the severer ones the patients may get up first in the afternoon, then after a time, in the forenoon, but should be kept in bed till after breakfast for a long time. Get them out of doors daily for fresh air and moderate exercise. This is the plan for partial rest to which cases of pronounced depression and restlessness should be subjected as far as practicable. When the irritability is great, permit them to get up occasionally, to lie on a couch, etc., but promote resting in any way it can be gained. *Exercise should always be kept within the limits of fatigue,— this is the golden rule of neurasthenia.* Macfarlane well says that fatigue invariably intensifies the symptoms, whatever the limit may be; and this must be determined for every individual case.

The guides to the limit of fatigue are most obscure. It has been seen that the feeling of it does not measure it in the well, and that in the weak, one of the most important facts in the disorders of the "sense of body" is what may be called anæsthesia of the sense of fatigue. There is no escape from the logic of this condition,— the patient's appreciation of it must always be *interpreted* by the physician, who must also study all the signs of fatigue, and *direct* the patient as to the kind and amount of exercise. The effect of this, upon pulse and temperature, for example, should be watched. When the temperature is sub-normal, the conditions of elimination, nutrition and rest should be carefully maintained. Then, even a little exercise often seems to increase the irritability; but when the temperature becomes normal, more exercise can usually be borne without this effect, in the more acute stages of neurasthenia. In cases of long standing or partial recovery, of the irritable and ambitious or conscientious type, great depression and a sense of "terrible exhaustion" may follow as a reaction from indiscretion in exercise; this may be prompted by a period of comfort when the sense of fatigue may have been quite reliable as a guide within the narrow limits of much repose and gentle effort, but it is quickly lost under a little stimulation or excitement. Such a patient may astonish and mystify all concerned by extraordinary displays of apparent endurance, but it has to be "paid for" with the repentance that comes with the exhausting reaction that may amount to a true relapse. These effects not being appreciated by the patient as simple signs of fatigue, the "repentance" is quite sure to take the form of renewed and intensified self-reproach, with all its harmful effects.

[1] Delivered before the Massachusetts Medical Society, June 9, 1891.

The careful prescription of exercise is one of the most important duties of the physician in these cases. Within due limits it increases vigor by the law of physiological use. It quickens digestive processes and excites the appetite, and promotes sleep. He must "follow up" his patient and protect him in this particular, until he has acquired a sufficient reserve of energy, and a sufficiently normal "sense of body" to be his own guide. If the physician does not do this he will surely let his patient suffer painful relapses which too often occur in spite of all advice. For patients having cerebral exhaustion, though bodily well nourished, and with effects of sedentary habits, exercise should be coupled with efficient elimination, but it should be remembered that there is also increased central fatigue with all voluntary muscular effort. This must be carefully limited at first, in these as in other cases, while reasonable entertainment is a necessity.

Massage counteracts the tendency to enfeeblement from long rest,— it affords exercise without the expenditure of energy by the patient,— it promotes the removal of the toxic and waste materials from the tissues, and their healthy nutrition. It must be managed with care and not be too long-continued, but may be followed by medical or general gymnastics of the gentler kinds, or other voluntary muscular exertion, to the extent to which the patient bears it without aggravation of the neurasthenic symptoms. Electrical treatment has been much commended both for its sedative and stimulant effects, in the forms of central galvanization or general faradization; the functions generally improve under its tonic influence. It may be employed for a few weeks every other day. It often has a mental effect.

Sleep should be promoted with as little use of hypnotics as possible. They tend to spoil the appetite and to produce secondary effects. Toxic quietude of brain cells may not promote their rest and nutrition. In the diverse causation of neurasthenia the conditions inducing insomnia are varied. Its cause should be determined, in each case, as nearly as possible. There may be some special toxic influence, errors of diet, too much mental work and too little bodily exercise, the rheumatic or gouty diathesis, etc. While the blood tension is usually low in anæmic conditions, it is again high, and a few minute doses of calomel at night with alkalies during the day, are indicated. Sleeplessness from physical over-fatigue may be relieved by the wet pack, a warm bath, or massage, with some liquid nourishment in moderate quantity. — with a little wine or brandy and a biscuit.[61] If the patient must have something for a hypnotic, do the least harm possible. In such cases Folsom [62] uses preferably an unpleasant drug, — a few minims of paraldehyde in a drachm of chloroform water, and this can be repeated a number of times. This drug is a safe one in drachm doses, when it can be taken; and a second dose may be given after two or three hours; peppermint water is a good vehicle for it. Sulfonal is, at present, to be regarded as one of the safest hypnotics. Begin with ten or fifteen grains, and when its cumulative effect is gained, reduce it to ten or seven grains; it should be pulverized and given in a moistened spoon, one and one-half hours before its effect is expected. Phenacetine, five or ten grains, two or three times daily, is sometimes a good adjuvant when there is nervous distress and restlessness; or it may be repeated every hour, or half hour, till twenty or thirty grains are given, for the relief of pain. Warm baths and night feeding are very effective in the long run. Most patients who lie much in bed can get on with comparatively little sleep. It is better to go without as much as is desired, or wait for it to come, rather than to create a drug habit. Two or three hours each night will do very well for a considerable time in such cases. Beware of using the bromides and chloral continuously. Patients are sometimes brought to the asylums in toxic conditions from these drugs or from paraldehyde. The first may be given moderately for a short time only, — not more than one week. Iron and other tonics that improve the appetite may be given when well borne. Aromatic spirits of ammonia in half-drachm doses may be used frequently and safley in paroxysmal nervousness.

The *subjective* and mental symptoms, in relation to treatment, demand the special attention that their importance in diagnosis indicates. In studying the objective symptoms, a general though brief review was made of the measures ordinarily regarded as therapeutic. This included not only the physical signs, but necessarily also that group of coincident subjective indications of which we can only know by what the patient says of his bodily condition; his appreciation of it may be mainly correct and corroborative of the physician's observations, or be interpreted as consistent with them. This includes the *inward* reactions, or *negative* symptoms of the physical disorder, according to Putnam,[63] distinguishing them from the *positive* or objective signs.

But we have seen how the normally correct appreciation of the "sense of body" is qualified in the well; and how with the onset and increase of pathological "fatigue" there is an increasing impairment of appreciation, requiring interpretation by the physician. We have seen also how the impaired and altered "sense of body," and special senses as well, in respect to the group of subjective symptoms just mentioned, affect the strictly mental indications. All can agree as to the symptoms of neurasthenia being mainly subjective; and as to the fundamental facts of irritability and languor in mind and body,— and of mental depression and weakened control. Our study of the mechanism of these alterations of mental activity leads us to see clearly the significance of such effects, and that "the higher mental states are the sensitive indices of the lower physical changes," affording us the truest guides to diagnosis and the need of treatment.

The subjective symptoms, with a correct interpretation of mental states, are the chief guides to diagnosis and treatment. They give the earlier and finer indications, for they always exist when there is neurasthenia; they are often present, and complained of, when there are no clear objective signs. The paramount importance of the mental condition becomes plain because it has to be treated from first to last; there is often no guide but this. Even when all objective signs have for some time disappeared, there can be no assurance of recovery until the patient can say that there is permanent freedom from the depression, irritability, or languor of feeling, and that he has acquired the power to control his own mind, and his natural force is not abated. The most critical periods of the

[61] Macfarlane, op. cit. p. 118.
[62] Bost. Med. and Surg. Journal, July 10, 1890, p. 29.
[63] J. J. Putnam. Art. Neurasthenia, Ref. Handb. of Med. Sc.

progress towards recovery, when the danger of relapse is greatest, are when the only guides to the limits of fatigue are the subjective and mental symptoms, — what the patient feels and thinks as to his own condition. But that itself does not guide, — it is continually leading astray the patient and often the physician. The true guide is to know what it is that makes the patient feel and think as he does. It is upon the correct interpretation of the mental signs that successful treatment largely depends.

A correct knowledge of the working of the mental elements is essential to put the physician into a proper and controlling relation to the case. The very first indication for treatment is that the confidence of the patient should be gained as soon as possible. This is aided by the careful examination, that should always be made, in every particular, bodily and mental, that is needed to establish the diagnosis. It is then important to give the patient a clear understanding of the nature of the malady. Intelligent patients are always very ready to accept correct explanations of their condition and experiences, and it is often most satisfactory to them to know, for example, the reason for the morning tire, and to understand the principle of anæsthesia of the sense of fatigue. They know what it is to be too tired to feel fatigued. The first thing is, therefore, to know what is the matter, and then to get the patient to know it; this gains the willing and intelligent coöperation of the invalid, — relieves greatly the worry, — and thus directly promotes repose and the arrest of exhausting processes both in body and mind. All writers agree as to the importance of gaining such coöperation, and advise careful attention to this part of the treatment of such cases.

When the physician thus appeals to the understanding and interest of his patient, he addresses himself exactly to the moulding of the mental elements that are involved in the malady, — he sets himself, at the outset, to treat the symptoms that all observers note as among the earliest to appear. The first clinical procedure, then, with which the treatment is begun, is to get the whole story of the patient's experiences with reference to the symptoms, as soon as practicable. When neurasthenic patients come to the physician they have usually made a number of attempts at "resting," and have suffered as many relapses because the golden rule of keeping within the limits of fatigue was not followed to the completion of convalescence. The patient comes because he has begun to think that someing serious is the matter, and that because recovery does not come it may never come.

The treatment of neurasthenia, with respect to the indications given by the mental elements, resolves itself into procedures suited to two general groups of indications. These may be broadly distinguished as the *first-effects* and the *after-effects* of the neurasthenic condition. Among the first-effects, or those attendant upon the active operation of the neurasthenic influences, are the direct and immediate results of excessive expenditure of energy, deficient repair, toxic effects, etc.; these may represent the formative stages of the supposed "molecular or chemical variation" that is manifested as "an exhausted or changed nutritional power." Among the after-effects these changed conditions become more pronounced; the expenditure of energy may be greatly lessened, but it is limited by its relation to weakened assimilation; the toxic elements may have been largely eliminated, though some of their effects remain; the condition is more strictly one of "irritable weakness," and all the secondary effects of morbid habit and association are in full force. The neurasthenic condition, as modified by after-effects, presents a materially different problem as to mental treatment.

In the early and active stage of neurasthenia the problem is a relatively simple one for the analysis and interpretation of the mental symptoms as a guide to treatment. The history of the case should make it easy to distinguish the four orders of the subjective symptoms, and to trace their development. Take for example the case of the physician whose account of it was quoted, in a previous page, from his letter. At the closing of a busy year, while still doing very active work, he felt that it required greater effort; he could not help worrying unduly; there were threatenings of the sciatica to which he had been most subject at that time in the year, and he sometimes felt considerably fatigued. After three weeks of greatly lessened work, the four orders of symptoms were more plainly revealed; there was (1) "a letting down of spirits;" (2) lessened control over his worry; (3) the worry was consequently increased, and there was (4) an altered "sense of body," shown in nervous irritability and languor, and excessive sense of fatigue. The condition being further interpreted, there was more real "fatigue," but it was concealed by a fatigue-anæsthesia when he was still active, than later when he felt it more keenly after partial rest. In other words, he was really better when he felt worse, — he was recovering his sense of fatigue. This was proved by the sequel: in the fourth week, with no change in affairs, etc., and no treatment other than the comparative rest, he was quite well, was changed in appearance, had recovered his cheerfulness, and began his summer vacation with better zest than for a long time before.

In another case, a lady engaged in clerical work had for three months an increasing tendency to aching and a sense of pressure in the head, and to waking early in the morning; she would not confess to morning "tire," but said she felt "worse" then; she worried, felt the need of greater effort to begin her daily task, but "*could work faster*" than before, and being conscious of not feeling well, she expected a short vacation to restore her strength. On returning to duty, the work seemed very difficult and not half done on the first day, and impossible the next, from weakened mental control; the insomnia, worry, etc., greatly increased, and a prolonged rest with careful treatment had to be ordered. She knew she was "running down," by failing appetite and loss of weight. Otherwise, there was little in either of these persons besides the subjective symptoms to call attention to the neurasthenic condition; neither was it appreciated by them until there was lessened stimulation by work to be done. The four orders of symptoms were plainly shown in the last case; their earlier recognition would have clearly guided treatment obviously necessary to have saved the patient from so dangerous an approach to a serious mental breakdown. This applies particularly to the fourth order of symptoms, — to the fatigue-anæsthesia, and the deceptive facility from irritable weakness, that enabled the patient to "work faster," thus increasing her danger. In the more advanced cases, the mental indications, as first effects, are clearer, and their analysis easier. Their value as guides to treatment is more readily apparent, pointing to their

origin in organic inanition and auto-intoxication as the double cause of the "fatigue."

The after-effects of the neurasthenic condition present modifying indications that have to be met in the plan of treatment. These are seen in the latter stages, either in convalescence or chronicity. The significance of the symptoms, in this regard, has been pointed out. For example, one who has regained some reserve of nervous energy, and maintains a fair degree of comfort when effort is kept within his limits of fatigue, may be prompted by desire, or a sense of duty, to over-exertion. The undue quickness of response to the stimulation of interest and attention is to be recognized as an evidence of the irritability of unstable weakness. The apparent ease and zest of the effort is not due to real power, but there is a speedy blunting of the sense of fatigue. The reaction of exhaustion and mental misery that come as after-effects are not to be interpreted as the patient feels and thinks, but as precise manifestations of — (1) changed organic sensations shown in a lower emotional tone and "hopelessness," — (2) the decrease of the mental power of control in weakened attention, — (3) worry, self-reproach, and apprehension as simply signs of a relapse of the "fatigue," the limits of which were exceeded in breaking the rule of treatment. The fundamental weakness is shown, from the beginning of the event, in (4) the susceptibility to stimulation and quickly changed sensations, followed by increased exhaustion and irritability.

Such an analysis of a later stage of neurasthenia reveals the four orders of symptoms as we may observe them in a case under proper treatment, in which there may be a measurably effective elimination, but defective assimilation still remaining, and therefore prolonged inanition. The irritable weakness is more characteristic, and the indications for treatment are all the more significant. The whole matter comes, in fine, to this: — the condition is one of deficiency of nervous energy, — the problem is to effect a re-storage of that energy. It is a part of the process that the power to do things can only be maintained or regained by the doing of them, — by the law of use and disuse. But the patient must always be "kept within the limits of fatigue" during treatment, through convalescence, to establish recovery.

In these later conditions the advantage of intelligent co-operation on the part of the patient becomes more evident. It is a part of the treatment, therefore, that the patient should be taught to make a correct interpretation of his symptoms; he will thus become an aid to the physician, and learn finally to be his own guide as to the limitation of effort. One cannot "go by feeling" whose power to feel is itself disordered, and this lesson once learned has a therapeutic value by leading the patient to "go by judgment." But it is precisely because of weakened attention and morbidly intensified feeling that the better and often accepted judgment cannot be held. Here comes in one of the chief duties of the physician with respect to the patient's mental condition. It has been seen that his "exercise" must be followed and guided with persistent care. As the changes in bodily conditions are best revealed by the mental indications, these should be followed with sufficiently close observation, and encouraging counsel, to enable the patient to hold to the way of recovery and to faith in the necessary means. It is a part of the physician's business to repeatedly uplift his patient by explaining the newly-arising worries, and directing as to diet and exercise. If he is left to himself too early in regard to all these matters, relapses are very sure to come through inability to interpret correctly the altered sensations and the fallacious appearances of returning strength.

The foregoing considerations apply particularly to the large class of patients that have to be systematically "held back" in all stages of the neurasthenic conditions. The opposite class of cases has been mentioned that require urging to effort, when the proper time comes. Here is revealed more plainly another modification, as an after-effect, that always introduces great difficulty into the treatment. It is the effect of the laws of use and disuse, — of practice, habit and association. The long continuance of disordered activity has created a "functional disposition to repeat organic processes" in a morbid way, and it has been shown how this involves a like association of morbid ideas and feelings.

The "functional disposition" may work to good or bad results. In either case the principle is the same, — the law of use and practice rules. To overcome a harmful "disposition" to repeat organic and mental processes is exactly to re-acquire good habits by the practice of them. Hence it is that the power to do things comes by doing them, and by gradually gaining the effects of practice. Small beginnings are necessary in these cases of neurasthenia. It is the persistence of repetition that is efficient. In the condition of first-effects there is lack of power, and it is plain that there is no place for heroic methods of breaking up morbid "dispositions" and habits. More harm than good is likely to be done by dominating methods unless based upon a clear insight. But forceful measures may sometimes be wisely used; it is only when power is sufficiently restored that such measures are justifiable as against morbid habit in the "after-effects." Confidence gained, and the truth made plain, are the best helps. In the peculiar cases requiring it the best way is for the physician to suggest in advance the new effort to be made, "not now, but by and by," when the patient is going to be ready for it. He becomes familiar with the idea, and when the time comes the expected effort is successfully made. This is leading along by holding back; such patients are afraid of being "pushed;" they have usually, in the earlier stages of the malady, made mistakes in "pushing" themselves or by having it done by others. The patient's mind should always be prepared in advance for changes. Much is gained by giving the confident expectation of recovery. This is one of the best remedies of all, and it can be truthfully applied because most cases of true neurasthenia should get well.

The rule has been laid down that "exercise should always be kept within the limits of fatigue," and we know that the guides to those limits are most obscure. It is equally the responsible task of the physician not to overdo his duty, in the cases that have to be held back, and in those that have to be urged to effort. It is precisely in the extreme cases of the latter class, — what Mitchell would call the "vampyre" type, — that the greatest discretion must be used. Such patients are often the victims of morbid-association habit and a self-indulging egoism; under the spur of a seemingly perverse interest, they will sometimes make unwonted and extraordinary effort. We must realize that this may be done without a concurrent sense of fatigue,

which may come later in a real and most painful way. Then the patient has a new argument to sustain her self-deception that all effort is bad; and even the physician is sometimes put at fault if his heroic measures are not successful. There is need of sympathetic helpfulness even here.

We often ask ourselves, in all cases requiring enforced effort, what are the "limits of fatigue"? It is perhaps the clearest guide in such cases that "exercise" may be pressed with safety while the fatigue of it is *felt*, even sometimes to the degree of painful *tire*. To avoid "fatigue" is to keep within the limits of *pathological* fatigue, which gives due warning by the signs of fatigue-anæsthesia. This rule applies as well to the graver cases of neurasthenia presenting mental symptoms, when the progress upward toward recovery reaches the degree where normal fatigue is felt. In such cases, after the symptom has been left behind that technically differentiates melancholia, it is neurasthenia the rest of the way to health.

A change from the usual surroundings often does great good. The breaking up of painful associations, on the principle of "out of sight, out of mind," always holds good to some degree. Even homesickness is often salutary,— it is a natural and wholesome "worry" that works to advantage when it displaces a morbid worry. Dependence upon devoted and sometimes over-sympathetic relatives is likely to endanger the formation of degenerative habits in long and severe cases.

It has often been said that the very first requisite for successful treatment is to gain the confidence of the patient; this recognizes the leading importance of the mental element. It is a part of this requisite, however, that the physician should first earn the confidence he seeks to gain. It is the *interest* the patient has in the means for cure that is the most helpful motive; and we have seen what control a feeling of interest has over the attention. But the patient's interest is very exactly measured by what he feels is the physician's interest. This means sympathy, — for that and such interest are one. The physician's sympathy must be genuine, — no one more quickly than such a patient detects a false tone in it. No one more readily sees the fitness of good explanations. But the way to true sympathy is plain, — it springs from knowledge. The physician should first know his case, — then all that is needful follows. No good physician, who acquaints himself with the marvellous simplicity that underlies and rules the elements of his patient's suffering, and thus sees the way to cure, but must be keenly alive to the worthiness of the most skilful efforts. The patient's interest will then take care of itself, — his attention is held through motive interest. In mental matters all this is strictly physiological, which Bucknill says is true of all that is meant by "moral treatment."

Conclusion. — The purpose of this study of neurasthenia is to contribute something in the search for the philosophy of its treatment. To make this philosophy practical, it must be drawn down to plain terms. We have seen that the central fundamental fact is nervous weakness, manifested primarily in two ways: (1) by an exactly parallel weakness of mental inhibitory control through voluntary attention, and (2) by the central motive element of a lowered emotional tone, from a sense of ill-being. The first of these indications may be concealed, even from the patient himself, by intensified interest and increase of effort; the second he *feels* and soon betrays.

The complex accessory conditions of changes in the sensations, — irritability and hyperæsthesia, languor and anæsthesia, and their causes, — have been explained. These are manifested a little later than the primary mental effects. The prime indices of the neurasthenic condition, therefore, are weakened mental control and a painfully intensified motive element. It is this central emotional tone, determining *interest*, that has the sway; this is our point of attack. There are two ways of approach to it: (1) through the body, restoring its strength and well-being, — mental comfort and control follow; (2) through attracted attention and suggested ideas we reach the emotional tone, — healthful feeling and interest attend upon wholesome ideas.

While the patient is in the condition of first-effects, as long as the causes of bodily ill-feeling persist, we can only palliate, or prevent increase of trouble, — only transient effects are produced by influencing the emotional tone in the second way. Here the chief aim is physical restoration; this being soon accomplished, all is well. We prescribe rest and urge nutrition; this means also elimination. But in the condition of after-effects, the problem is changed. The toxicity of true neurasthenia being removed, and that of special diatheses, as of uric acid, being controlled, we have to deal with inanition from cell inaction, and the effects of habit. The patient finds it easiest and most *interesting* to attend to the habitual association of morbid ideas and feelings. The body in repose is then comparatively comfortable, while there is only a weak tolerance of a little effort and toxicity; the way to the motive element for the stimulation of healthful *interest* is through ideas. But effort is painful, the will is weak, habit is strong. Hence we instruct our patient how to understand his contradictory symptoms; we introduce corrective factors into his mental equations, raise or reduce others to their true powers, and eliminate the constants of error. Then we prescribe exercise, urge practice within the limits of fatigue, and maintain elimination and nutrition. By physiological use, the will recovers its power, exercise promotes assimilation and elimination, and increased vigor; effort becomes easy, wholesome interests revive, and the emotional tone is one of ease and comfort.

The maintenance of a sense of well-being, under reasonable effort of body and mind, is the sign of obedience to the rule that "exercise should always be kept within the limits of fatigue." Normal fatigue is simply wholesome *tire*, — then rest is welcome and is followed by immediate comfort. Pathological fatigue is attended by fatigue-anæsthesia, and this marks the beginning of danger. We find our natural safeguard against that danger in observing the mental effects that quickly manifest their close relation to normal fatigue and its toxic products. But we have seen that when wholesome tire passes over into pathological fatigue, there comes over-tire not only to the central and motor, but to the sensory, elements of the mechanism. The recognition of the mental effects of the changes in the "sense of body" is our constant guide to prophylaxis and treatment, — for both of these uses, the golden rule is that exercise should always be kept within the limits of *pathological* fatigue. Fatigue-anæsthesia betrays us into its toils, — it is a danger-signal if we recognize its significance.

It becomes conspicuous by the absence of normal fatigue when there is the presence of *other* signs, — the first of these are the mental effects of fatigue. This teaches us the precise and saving significance of all these mental signs.

In these considerations lies the proof of the proposition with which the discussion was begun: — neurasthenia, for a guide to its prophylaxis and treatment, makes itself known to us mainly through the significance of its mental symptoms.

Original Articles.

HOW IS TUBERCULOSIS ACQUIRED?[1]

BY J. A. JEFFRIES, M.D., BOSTON.

The question is, How does the tubercle bacillus gain access to our bodies and those of our domestic animals? Tuberculosis is frequently spoken of as being an hereditary disease; this it is not and never can be. The characters of life, the laws which make us born men rather than something else are hereditary, but not the presence or products of a parasitic disease. Where the offspring is born tuberculous, it is a case of congenital disease. Such cases occur in cattle, beyond all question. Thus Blaine[2] reports two cases of eight-months' calves born with tuberculosis; Misselwitz[3] reports two cases of fœtal calf tuberculosis; Malvoz and Brouwier,[4] the case of an eight-months' fœtus with tuberculosis of the cord, the liver and the glands at the roots of the lungs; and Johne[5] a similar case with one small nodule in the lungs, many in the liver, and enlargement of the bronchial and portal glands. In the last two cases tubercle bacilli were found in large numbers.

Turning to man, the record is much less complete. Birsch Hirschfeld[6] reports the case of a child delivered with uninjured placenta by Cæsarean section. Microscopic examination showed large numbers of tubercle bacilli in the placenta and a few in the veins of the liver, but no tubercles in either organ. Scanzoni[7] found advanced acute infiltration of the lungs and tuberculosis of the peritoneum in a dead-born child. Scanzoni's case dates from 1852, is briefly reported, and could not stand by itself. Birsch-Hirschfeld's is of recent date and of the best authority. We must therefore accept that the parasite can gain access to the human fœtus.

Does congenital infection often occur? Can the bacillus gain access before birth, and lie latent for fifteen or fifty years, as claimed by some, and then suddenly become active, and kill its host? The paucity of records shows that congenital infection is very rare. That the second is possible there is not an iota of evidence; it is only a comfortable way of explaining what is not understood. Against it, much can be cited, as the rarity of proved congenital infection and the activity of the germ in the young. The lesson is that we must be careful of the maternity of our experiment animals. Congenital infection is not a factor of importance in the propagation of tuberculosis.

Passing to infection after birth, we can endeavor to track the bacillus from its course to the point of entrance into the system, and also draw inferences as to the mode of infection from the history and occurrence of the disease and an autopsy. The bacilli can be directly transferred from one animal to another, as by contact or the consumption of diseased portions, or they can first leave their seat of growth, become part of the dust, and later gain access to the second animal.

To take up the simplest question, that of direct contact, there is no doubt of its occurrence. Medical literature contains many such cases, from kissing to the Jewish ritual. But though the cases are striking, often self-evident, the number on record is insignificant when compared with the prevalence of the disease. Probably indirect inoculation plays an important part; at least no other explanation of the mass of lupus, skin tuberculosis, and scrofula of the superficial glands is at hand.

The question of food cannot be so easily treated; it is involved in many difficulties. At the first step we meet a stumbling-block. In what foods does the tubercle bacillus occur? In those derived from tuberculous animals. The remedy is therefore apparent; do not eat any portion of such animals, have all cattle inspected, and all those affected in any way condemned. Very good, very radical, very expensive, but not perfect. The inspectors could not enforce the law, could not recognize the cases. It is therefore best to consider food under various heads, so as to gain an idea of the amount of danger, and adopt measures to meet the special conditions. Though actually diseased portions do not figure as an article of human diet, I give the summaries of Johne, Wesener and Biedert, since they show the danger from food under the most favorable conditions for infection.

Johne[8] found 117 animals fed with tuberculous material from cattle, with 61.5% positive, 34.2% negative, and the rest (4.3%) doubtful results. Forty-one were fed with the flesh from tuberculous animals, with 13.1% positive, and 86.9% negative results. All those fed with cooked flesh gave negative results. Dividing the experiments according as the food was cooked or not, he gives 259 fed with raw material with 47.7% positive, 48.9% negative, and 3.3% doubtful, as compared with 35.5%, 64.4%, and 1.6% respectively, when the food was cooked.

Wesener's[9] figures are not so suitable for our purposes, still he agrees with Johne, that all experiments with cooked flesh are negative. There are, however, a few apparently positive cases reported in which cooked viscera were fed to swine.

Biedert[10] gives the figures as 548 animals experimented upon, with 119 positive, 367 negative, and 64 doubtful results. It will be noted that Biedert gives a much lower positive percentage, and much larger doubtful, than Johne. This difference is due to the exclusion of all cases where the control animals became tuberculous. The number of positive results (21%) is very low, in view of the amount of tuberculous material fed, and shows clearly that animals are slow to contract the disease from their food. Many objections

[1] Read before the Boston Society for Medical Observation, June 1, 1891.
[2] Medical Record, 1887, vol i, p. 60.
[3] Siedamgrotsky's Berich., 1889, from Baumgarten's Jahresber, 1890.
[4] Ann. d'Instit. Pasteur, 1889, p. 153.
[5] Deut. Zeit. f. Thiermed., Bd. ii, 1884, p. 207.
[6] Deut. med. Woch., 1891, No. 11, p. 404.
[7] Lehrbuch der Geburtshülfe, 1852, p. 358; after Epstein.
[8] Deut. Zeit. f. Thiermed., 1883, p. 1.
[9] Kritische und experimentelle Beiträge sur Lehre von der Fütterungstuberculose, Frieburg, 1882.
[10] Jahrb. f. kinderheilk., N. F., 21, 1884, p. 158.

were made to these experiments at the time; but, to my mind, the only important one from our point of view is that nearly all the animals were put on food which was not suitable for them. The carnivora in Johne's list are 60 pigs, 20 dogs, and nine cats. The dogs and cats I have not been able to trace to the original sources, but it is worthy of note that Wesener classes the cats as all negative. Pigs give the best result, it making no difference if the food is cooked or not, which strongly suggests error. Sauer's [11] note, that the animals in a zoological garden were fed for years on tuberculous meat, without contracting the disease, is of interest in this connection.

To return to the state of affairs with men, law and custom combine to reject the whole of highly tuberculous, emaciated cattle, but allows the sale of flesh from animals with localized tuberculosis, if in good condition. What danger do we incur by eating this meat? Many are calling for the total condemnation of all tuberculous cattle. There are very few, if any, records of tuberculosis in normal muscle, which will stand criticism. The danger, therefore, is confined to the germs which may have slipped into the general circulation shortly before death. To determine this danger, many experiments have been made by inoculating the juice pressed from the flesh of highly tuberculous cattle into rabbits and guinea-pigs. I have collected from Arloing,[12] Dreschfield,[13] Galtier,[14] Kastner,[15] and Nocard,[16] the tests of fifty-nine cattle, with 13 positive results, all from highly affected animals. Besides, there are Steinheil's [17] experiments with the flesh of people dead of phthisis, with nine trials and some positive results. As dead cattle are not allowed in the market, these results do not apply. Also, Bollinger states that Kastner has recently made five tests with condemned flesh, all positive, and one with flesh from a highly tuberculous but not condemned case, with negative results.

From the above we are justified in concluding that tubercle bacilli, in meat as sold under inspection, are rare. What effect, if any, the long keeping of the meat before eating has upon the bacillus, is not known. This should be inquired into, since muscles become acid on coagulation, and acids have a distinctly deleterious effect upon tubercle bacilli. The mass of our meat is cooked before being eaten, and in this way what danger there is, is greatly reduced. This is shown at once by the experiments on animals (all negative), and the fact that heat, such as that applied to ordinarily cooked meat, is sufficient to kill the bacilli.

The results of feeding man with tuberculous meat, reported by Schottelius,[18] are of interest. The people about Wurzburg, believing such meat to be harmless, made so much complaint, that its sale, under careful supervision, was allowed during a part of 1868. The carcasses were bought whole, and divided between twelve families. In all, 49 cattle were consumed before the authorities gave up keeping the record. If such food is dangerous to any degree, the result should have been a marked increase in the amount of tuberculosis in the twelve families, as compared with the rest of the population. This was not the case. Up to the time of report, in 1883, there had not been a case of tuberculosis which could be attributed to the food, though surely seventy people regularly lived on it.

Also, Bollinger [19] cites the town of Ritterwiesen, where there was much tuberculosis among the cattle. Yet, in spite of the general consumption of their flesh and milk by a population of 425, there were only three deaths from tuberculosis during the years 1874–78, inclusive. Curiously enough, none of the three deaths occurred in the families which ate the flesh. The same author inquired into the history of all the foundling-families known to consume tuberculous meat, and failed to find a single case of tuberculosis.

To sum up, there is little absolute proof that raw flesh, when consumed in the course of nature, is dangerous. Yet, after making allowances for the inaccuracies of experiments, there is no doubt but that there is some danger. As regards cooked flesh as consumed by man, there is no evidence of danger, though we have many records where bad results might justly be expected were they at all common. I do not mean to oppose inspection, — far from it. All cases of general tuberculosis should be condemned; but I do not believe that the danger justifies the total seizure of all tuberculous cattle. The expense is too great; the same amount of money will produce better results when applied in other ways.

Milk, often consumed raw, and at one time or another an ingredient of the food of every human being, is generally accepted to be a greater source of danger than flesh. It has long been known that the tubercle bacillus is liable to occur in the milk of tuberculous cows; and much time has been spent in an endeavor to gain an exact knowledge of the danger. There are four classes of observations to consider, — feeding experiments, dating back to Villamain; inoculation experiments; direct microscopic study of the milk; and the prevalence and nature of tuberculosis among the consumers of raw milk, chiefly the young.

I have only been able to collect a few of the reports on feeding, since the articles are mostly in out-of-the-way places, and not specially indicated by the titles. They are, as far as possible, briefly summarized.

Gerlach [20] fed the milk from a cow showing marked tuberculosis of the thorax at autopsy (other organs not noted) to a number of animals. These, killed at intervals, showed tuberculosis, more or less general, throughout the body. All the animals received other food than that from the cow. There were no control animals, and no note of precautions taken to avoid other modes of infection.

Schreiber [21] fed three guinea-pigs and 18 rabbits with the milk from a tuberculous cow for some time, results negative.

Bang [22] has fed the milk from five cows with tuberculous udders to pigs and guinea-pigs, with positive results in all.

Cavagnis [23] reports three young guinea-pigs suckled for eight, twelve and thirty-two days by a tuberculous mother, with negative results.

Peuch [24] fed 4.470 grammes of milk from a cow with tuberculosis of the udder to a pig. This, killed

[11] Der Thierarzt, Bd. xvii, p. 17.
[12] Congrès pour l'Etud de la Tuberculose, Paris, 1889, vol. i, p. 59.
[13] Cited by Ransome, No. —.
[14] Congrès pour l'Etude de la Tuberculose, vol. i, p. 76.
[15] Münch. med. Woch., 1889, Nos. 34 and 35.
[16] Congrès pour l'Etude de la Tuberculose, vol. i, p. 49; Bullet, et memoire de la soc. centrale de med. Veterin., 1885, t. iii, p. 49.
[17] Münch. med. Woch., 1889, Nos. 40 and 41.
[18] Virchow's Archives, Bd. 91, p. 129.
[19] Aerztl. Intelligzb., 1880, p. 409.
[20] Virchow's Archives, Bd. 51, p. 290.
[21] Zur Lehre von der artificiellen Tuberculose, Diss Inaug., Königsberg, 1875.
[22] Deutsch. Zeitschrft. f. Thiermed., Bd. xi., 1884, p. 45.
[23] Baumgarten's Jahrb., 1888.
[24] Congrès pour l'Etude de la Tuberculose, vol. i, p. 73.

fifty-six days later, was found to be normal. (Four rabbits inoculated at the same time developed tuberculosis.)

Ernst [25] has reported the result of feeding 13 calves with the milk from 13 cows supposed to be tuberculous and free from tuberculous disease of the udder. In five of the calves tuberculosis was found; in seven none; and one was suspicious. Only eight of the calves were fed with the milk of one suspected cow; three of these were found tuberculous. In all, six cows were used. Of the three infecting cows, two had disease of the udder. In one no autopsy was made. In all three calves there were tubercles in the liver, and, in one, in the kidney. None were reported in other parts of the body. No control animals were reported.

Besides the above, there are many more, as Wesener, in 1885, gives the figures as 86 animals experimented on, with positive results in the two calves, three-quarters of the pigs, half the sheep and goats, two-fifths of the guinea-pigs, very few of the rabbits and none of the cats. How many animals the milk came from, or the state of the udders, is not given; probably most had trouble in them, as at that time experimenters were working for effects, not relative danger.

These results are not striking, considering the source of the milk, and accepting them as they stand. Probably in most cases the results as given represent the facts; but control animals, less advanced lung trouble and more intestinal trouble, would have made them stronger. Affection of the mesenteric glands, as will be shown later, is not a proof of intestinal infection. It is also unfortunate that pigs fed on boiled milk were affected, for the bacilli in these cases must have come from elsewhere.

There are quite a number of inoculation experiments which are chiefly of value owing to the sensitiveness of the test. They only demonstrate the possibility of danger, and in no way show that the milk would have been injurious if consumed in the ordinary course of affairs.

Hirschberger [26] has experimented with milk taken in the laboratory from the udders of slaughtered cows. An admixture of blood was avoided as much as possible. His results were, with highly tuberculous cows, four among five positive; with middle-grade tuberculosis, four among six positive; and with pulmonary phthisis only, three among nine. All told, eleven positive results in twenty trials. Udders presumed to be normal, but no careful examination made.

Peuch [27] injected 10, 20, 30 and 40 grammes of milk, from a cow with tuberculous mammitis, into four rabbits. All died of tuberculosis.

Nocard [28] has tested the milk from ten cows with advanced tuberculosis, but none of the udder, with negative results throughout.

Martin [29] has tested 13 lots of city milk. He classes the results as three negative, one positive, five doubtful and four discarded. Personally I should discard one, class eleven, as distinctly negative, and the other as doubtful. Tubercle bacilli were not sought for, but bits produced the disease in other guinea-pigs. The trouble very likely was pseudo-tuberculosis; but granting that it was tuberculous, the autopsy does not read like a case of inoculation into the abdomen. The lesions in the abdomen were fresh; the omentum was free from trouble; and the bronchial glands were enormously enlarged.

Bang [30] experimented with the milk from two cows with advanced tuberculosis but normal udders; results, one positive and one negative. Later, he reported trials from 21 cows with general tuberculosis and no disease of udder, with only two positive results. He also tested the milk from eight phthisical women, with negative results. Later still, he reports the result of another series of 21 cases with 17 negative and four positive results. Of the four positive results, three had tuberculous udders and the other was doubtful.

Stein [31] has inoculated the milk from 14 cows taken, (like Hirschberger), after slaughtering, from the amputated opened udder. In four cases, he claims positive results. In two of these the udder was affected; in one is given as "normal but yellow," that is, not normal; in the fourth no statement is made. Why the third case is classed as positive is difficult to perceive, since the only evidence was some enlarged lymphatics, in which no bacilli could be found. Other similar cases are classed as negative.

Cavagnis [32] inoculated the milk, mixed with blood, from a tuberculous cow, and got a positive result. The udder is given as apparently healthy.

Ernst [33] got seven positive results by inoculation of milk from 14 cows, udders healthy.

Galtier [34] has reported inoculations from two cows, one with, and one without tuberculosis of the udders. The first gave a positive, the second a negative result.

Taking the figures just as they stand, we have 125 trials with cows' and women's milk, with 32 positive and 93 negative results. Of the positive results eight are given as having tuberculosis of the udder, 23 as not, and one doubtful.

My judgment leads me to reject all cases where the udder was opened after slaughtering. This would reduce the positive results to ten with no tuberculous disease of the udder, — the three of Bang and the seven of Ernst. Bang, in his last notes, evidently inclines to the view that bacilli are at least very rare in milk when the udder is not tuberculous. Of Ernst's seven cows autopsy is lacking in six; four showed some form of disease of the udder; and in the one autopsied this was tuberculous. This alters the figures most strikingly, and reduces as to Bang's three cases, which, as already stated, he does not put much weight on, and three of Ernst's cases without autopsy. It is hardly necessary to call attention to manifest difficulty in proving the absence of tuberculosis in a large organ like the udder.

Searching for the bacillus in milk as a test is not of practical value for our purposes. In milk from ordinary tuberculous cattle, slide after slide must be gone over in the hope of finding a bacillus among a number of other bodies, which, after hours of fatiguing labor, are only too apt to get the better of tired brain and eye. Of the truth of this statement I have seen many a practical demonstration. Even if the plant only occurs where there is disease of the udder, inspection does not give security, as the early diagnosis is very

[25] Transactions Association American Physicians, vol. iv, 1889.
[26] Deutsch. Archiv. f. kl. Med., Bd. 44, 1890, p. 500.
[27] Congrès pour l'Etude de la Tuberculose, vol. i, p. 73.
[28] Congrès pour l'Etude de la Tuberculose, vol. i, p. 49.
[29] Revue de Médecin, 1884, p. 150.
[30] Congrès pour l'Etude de la Tuberculose, vol. i, p. 69; Münch. med. Woch., 1890, p. 705.
[31] Experimentelle Beiträge zur Infectiosität der Milch perlsüchtiger Kühe, Inaug. Diss., Berlin, 1884.
[32] Baumgarten's Jahrb., 1888.
[33] Transactions Association American Physicians, vol. iv, 1889.
[34] Congrès pour l'Etude de la Tuberculose, vol. i, p. 81.

difficult. But as only a small portion of the tuberculous cows have tuberculous udders, the amount of tuberculous milk would in this case be quite limited.

The occurrence of tuberculosis among calves, infants, and a few other groups of milk-consumers, alone remains to be considered. Since calves are exclusively fed on raw cows' milk, they offer the very best of natural experiments as to the danger of milk. I have collected from various sources [38] the slaughter-house reports of the amount of tuberculosis in calves.

23,557	calves with	2 cases of	tuberculosis.
30,477	" "	1 case "	"
143,218	" "	35 cases "	"
23,592	" "	1 case "	"
800,000	" "	5 cases "	"
24,766	" "	1 case "	"
87,685	" "	26 cases "	"
1,133,195		71 = .006%	

These figures can be explained in several ways: first, that calves are only infected with difficulty by tubercle bacilli in their food; second, that there are very few bacilli in milk; third, that the disease does not have time to develop before the calves are killed; fourth, that tuberculous cattle do not suckle their calves.

Our evidence as to the first is not extensive, but, so far as I know, calves fed with milk known to be tuberculous have become tuberculous themselves. This is in accord with the condition of the digestive tract and the general law of susceptibility in young animals of all kinds. We are therefore justified in rejecting this proposition.

There is a good deal to be said in favor of the supposition that the disease does not have time to develop before slaughtering. Calves are killed, I am told, chiefly when from four to six weeks old, but the age may be more or less. The time is short. On the other hand, much can also be said against it: first, the calves found tuberculous prove that the disease can be recognized; second, the time is sufficient for the development of the two lesions to be expected from intestinal infection, those of the intestine and of the lymphatics of the mesentery. Again, young cattle, though more affected than calves, offer very few cases of tuberculosis. That tuberculous cows do not feed their young has nothing to support it. They are just the cows most liable to, as it is the poor milk which goes to the calf and the good to the man.

The second proposition, that there are but few bacilli in the milk of most tuberculous cows, is the only one left. This, taken in connection with the fact that the milk from cows with advanced tuberculous udders is so bad as to preclude its use for any purpose, affords a satisfactory solution.

I have reasoned as though all calf tuberculosis was due to food. This is certainly not the case; much is surely due to inhalation.

How about babies? They are the important test. Are many cases of infection from milk recorded? Certainly not, as shown by the difficulty in finding any. I have, however, found the following, and like enough there are as many more.

Leonhardt [38] reports the case of a healthy infant of healthy parents, which was weaned and put on cow's milk. The child soon died of tuberculosis of the meninges, intestines, and mesenteric glands. The cow which gave the milk was found to be tuberculous. Another child fed from the same cow died, at about the same time, from tubercular meningitis.

Soutag [37] reports the case of a six-months' infant of healthy parents, which at autopsy showed miliary tuberculosis of the meninges. It was fed with milk from a tuberculous cow.

Hermsdorf [38] gives three cases in which there was extensive intestinal tuberculosis, besides less of other parts. One had taken uncooked milk from a tuberculous cow. The original not seen, but the reviewer seems to doubt one case at least.

Demme [39] reports the case of a four-months' infant, which at autopsy showed tuberculosis of mesenteric glands; bacilli were found, but none elsewhere, in spite of great care. There was no tuberculosis in the family for two generations on either side. The milk came from a cow with general tuberculosis. Microscopic examination of the milk pressed from the depth of the udder gave a positive result after examining twenty to thirty cover-glasses, — not clear, but milk apparently taken from the udder at autopsy.

Bollinger cites Stangs' [40] case of a boy five years old who sickened with ascites and enlarged glands in the abdomen. At autopsy the chief lesion was tuberculosis of abdominal lymphatic, but also tuberculosis of serous membranes and lungs. There was no tuberculosis in the family for two generations. The child had for years been in the habit of drinking milk warm from a cow, which, growing thin before the boy died, was killed, and found to be tuberculous, — how much or where is not stated.

Some of the above cases are quite conclusive, though not absolutely beyond the possibility of error. The other cases, though probable, are not conclusive, as the following case of Toulmin shows:

A child, breast-fed, of healthy family, in healthy house, did well till at the ninth week it moved to rooms previously occupied by a phthisical woman. In one week the child began to sicken, and died when four months old. The autopsy showed enlarged and cheesy glands in the anterior mediastinum; one small tubercle of the anterior wall of the right ventricle; lungs much affected, with cavity the size of a marble; bronchial glands cheesy and soft; spleen enlarged; tubercles in spleen, liver, kidneys; ulcers of jejunum, ileum, Peyer's patches, cœcum and colon; mesenteric and retro-peritoneal glands enlarged and cheesy.[41]

On the other hand, Bollinger has collected the cases of a number of families which habitually used milk from tuberculous cows without catching tuberculosis. Out of 22 families only one man was found who could possibly be called tuberculous, and this man used no milk, only cream in his coffee.

Typhoid patients afford a fair test of the infectiousness of milk. Here we have a large number of people with erosions and ulcers of the intestine; yet, in spite of their extensive milk diet, no one has discovered that tuberculosis is a sequel.

(To be continued.)

[38] Propogation of Tuberculosis, by Lydten, Fleming and von Hertsen; Woch. f. Theirheilte., 89, No. 9; Am. Vet. Journal, January, 1889, and May, 1890.

[38] Correspondenzbl. d. Niederrhein Ver. f. öffentl Gesundheitspfl., 1877, p. 213.

[37] Siedamgrotzky's Ber. u. d. Vet. i. König, Sachsen, 1889.

[38] Ueber primäre Intestinaltuberculose, wahrscheinlich durch Nahrungsinfection bedingt, Inaug. Diss., Minn., 1889.

[39] Med. Bericht ü. d. Thätigkeit des Jenner'schen kinderspitales in Bern, 1886.

[40] Deutsch. Zeitschrift f. Thiermed., ii, 1875, p. 281.

[41] Toulmin: Johns Hopkins Hosp. Rep., vol ii, No. 1, 1890.

HÆMORRHAGES IN THE NEW-BORN.[1]

BY CHARLES W. TOWNSEND, M.D.

THE occurrence of hæmorrhage in the new-born, from the gastro-intestinal tract and from other parts of the economy, has been frequently noted in Medical Journals, and various causes for it have been ascribed. Most of the text-books on children's diseases, however, including the new cyclopædia of Keating, say little or nothing about this disease except as it occurs in the form of umbilical hæmorrhage.

At the Boston Lying-in Hospital, out of 5,225 deliveries up to May 1, 1891, some 30 cases of hæmorrhage among the infants are recorded; while in the out-patient department, out of 2,000 deliveries, two cases are recorded; making 32 cases in all out of 7,225 cases, or less than one half of one per cent. The proportion of cases in the hospital is nearly six times that in the out-patient department, however, the percentages being .57 in the former case and .10 in the latter.

In the following paper I have endeavored to analyze these cases, and, in a brief manner, the literature of the subject, in order to arrive, if possible, at some conclusions as to the nature of the disease, its etiology, prognosis and treatment.

The *Clinical history* of a typical case is somewhat as follows: A baby, often well developed and apparently healthy, is noticed to vomit a little blood or bloody mucus on the second or third day of its life. The stools, which by this time should begin to assume the normal yellow color, still continue dark; but this brown color is found, on examination with the microscope, to be due to altered blood corpuscles. Oftentimes, however, this special examination is not necessary, for the napkins about the discharge are tinged red, or the blood is even voided in unmistakable quantities. The navel, about the insertion of the cord, or on the exposed surface, if the cord has already dropped off, is apt to bleed at the same time, and blood will ooze continually from any slight crack or abrasion of the skin. Epistasis and bleeding from the mouth may also occur, and ecchymoses of greater or less extent may appear under the skin. Jaundice is frequently seen at first, to be succeeded by great pallor, as a result of loss of blood. The temperature may be elevated even to 106° F. Death or recovery occurs generally within three or four days.

In the 32 cases analyzed, 19 were males, 13 females, a proportion of the sexes which is significant when the relation of this disease to true hæmopleilia is considered. Twenty-five cases died, seven recovered, a mortality of 78 per cent. The day of death in one-half of the fatal cases was from the third to the fifth day, one dying on the first day, and three as late as the fourteenth day.

Hæmorrhage was first noticed in two on the first day, in seven on the second day, in eleven on the third day, and in six on the fourth day. In the six other cases the hæmorrhage occurred between the sixth and the ninth day, with one exception, which began to bleed on the fourteenth day. The duration of the disease, from the time it was discovered, in nine of the fatal cases was but a portion of one day; in four, the disease lasted one day; in three, three days; and in three more, five days. Of those who recovered, the disease lasted, in three cases, respectively two, six and eight days. In two cases it lasted three days, and in two more five days.

The sources of the hæmorrhage are given in the following table:

	Cases.
Intestine	12
Stomach	12
Mouth	12
Nose	8
Navel	14
Ecchymoses of skin	11
Crack of skin	1
All of above sources	3
Navel alone	2
Gastro-intestinal tract alone	15
Stomach, mouth and nose alone	7
Intestines alone	3
Ecchymoses alone	2

Slight, uncomplicated hæmorrhage from the uterus or vagina, pseudo-menstruation, is not very uncommon in the first few days of life, and is not included in this list.

Although umbilical hæmorrhage, which is the best-known form of bleeding in the new-born, occurred in nearly half of the cases, it is interesting to note that in all but two of these cases there were hæmorrhages elsewhere, a fact which points to the general hæmorrhagic nature of the disease. This fact was brought out by Dr. Francis Minot, in 1852, in the monograph which first called the attention of the profession to this disease.

In one case a cephalhæmatoma occurred; in another persistent hæmorrhage took place from scratches on the face and foot. In six of the cases the temperature is recorded; in all but one of which it was elevated, reaching in one case 106.6°. In the case where there was no fever, the temperature was taken only once, four hours before death, and found to be subnormal. Jaundice was noted in five cases, cyanosis in four; and in all where much blood was lost the infant became blanched. In four, convulsions appeared before death.

Post-mortem examinations were made in six cases. In one case the liver showed an increase of connective tissue, and the diagnosis of cirrhosis was made. In another case a hæmorrhage was found between the brain and dura mater. In the other cases the results of the examination were negative. Two cases were believed to be syphilitic.

The mothers' labor was normal in all but four cases, three being delivered by forceps low down, one by version. Two of the mothers had mild septicæmia, all the others making normal recoveries.

In 609 cases collected from the writers, given in the bibliography appended to this article, including my own cases, and excluding duplicates, there were 482 deaths and 127 recoveries, or a mortality of 79 per cent.; 210 were male, 150 female, and in 249 the sex is not recorded. This would make a percentage of 58 male amd 42 female.[2] I find records of 81 autopsies in this list. In the majority of cases nothing abnormal was found except extreme anæmia (which was the result of the bleeding), and in many cases internal hæmorrhages. Injection of the mucous membrane of the intestines, particularly of the colon, was frequently noted, although the observers are particular to state that no gross lesion of the mucous membrane was to be detected. In a very small

[1] Read before the Boston Society for Medical Observation, June 1, 1891.

[2] For a number of these references I am indebted to Dr. Minot.

number of cases the following diseased conditions have been found: syphilis, enlarged spleen, enlarged liver, inflammation of the umbilical and portal vein, acute fatty degeneration.

The *prognosis* in this affection is poor, the average mortality, as noted in my cases, being 78 per cent.; but on examining the cases more closely, it is seen that the prognosis in cases of hæmorrhage involving the gastro-intestinal tract alone, — sometimes called malæna neonotorum, — is slightly better, but 71 per cent. of these cases proving fatal. I have reason to think, however, that the prognosis is even better than these figures show, for the less serious cases of bleeding from the digestive tract may have not been recorded or not recognized. This latter error may arise in cases of discharge of blood high up in the intestine in moderate quantity. The blood then becomes changed to a dark, tarry color, so that the stools resemble the ordinary meconium stools. As before remarked, however, the blood can be detected by a microscopical examination, and in nearly all cases by the pink staining of the napkin on the border of the dejection.

There is a source of error which might lead one to diagnosticate hæmorrhage from the stomach when this is not the case. I refer to the fact that blood may be sucked from the nipples of the mother, in some cases from a crack or abrasion that can scarcely be detected. The presence of the abnormal substance in the infant's stomach excites vomiting, and the blood is ejected to the great consternation of the family, until the source of the hæmorrhage is discovered. It is said that maternal blood may be swallowed during delivery and afterwards vomited in the same way.

Where ecchymoses appear on the skin, in addition to the hæmorrhages elsewhere, the prognosis is worse. Out of eleven such cases only two recovered, although a fatal termination in these cases seemed imminent.

In making our prognosis it is to be remembered, therefore, that the prospect is not absolutely a bad one, even in the worst cases where ecchymoses appear on the skin, and the prognosis is the best in cases involving the gastro-intestinal tract alone.

Another point, it seems to me, is of value in making the prognosis, and that is, that the disease is, in nearly all cases, but of a temporary or self-limited character, confined almost entirely to the first ten days of life; and the longer the baby lives, the better are its chances for recovery. In other words, in the majority of cases, it is not the fact, as is often supposed, that these infants are affected with true hæmophilia, and are therefore doomed, even if they recover from the present attack, to subsequent and possibly fatal hæmorrhages. The reasons for this statement will appear later on.

The *etiology* of this disease is a subject about which much theorizing has been done, and I shall content myself with a brief outline of the causes assumed by various writers.

In the first place, prolonged labor, early ligation of the cord, plethora, debility, retention of meconium, difficulty in the establishment of the pulmonary circulation from obstruction to the breathing at birth, may, one or all, owing partly to the normal injection of the blood-vessels of the intestine of the new-born, act as exciting causes in this disease; but one or several of these conditions are so frequently met with, without such dire results to the child, that they can, it seems to me, be properly excluded from the true causes. Moreover, cases of hæmorrhage occur without these exciting causes. Septicæmia, in severe form (the source of infection being generally the umbilicus), and syphilis are, in a small number of cases, the causes of the bleeding. Rupture of large blood-vessels, as a source, has been disproved by all autopsies.

True inherited hæmophilia is in but rare instances the cause; and the arguments in favor of this statement are briefly: (1) The fact that infants who bleed during the first few days of life, and recover, are not apt to be bleeders in after life. (2) Hæmorrhages in the new-born, as shown by my cases and by the larger ones given above, are only slightly more common among males than females (58 to 42), while among true bleeders the preponderence of females is extremely marked, being stated at 13 to 1, or 92.8 to 7.2.

(3) In bleeder families the tendency is rarely shown before the end of the first year. Thus, Grandidier states that only 12 infants in 185 bleeder families with 576 individual bleeders were affected with hæmorrhage on the fall of the umbilical cord. Moreover, it is extremely rare among the large number of cases reported by various authors for a family history of hæmorrhagic tendency to be obtained, although this is a point that would certainly be known if it existed, owing, as Partridge well says, to its dramatic nature.

Confirmatory of the first of the above statements is the fact that, in several instances, infants who had recovered from an attack of hæmorrhage during the first week of life, have been circumcised a few days later without unusual hæmorrhage taking place. Two such cases are recorded by Ritter and one by Rotch. In two cases on my list bleeding occurred from the base of the cord as well as from various mucous surfaces, but the patients recovering, the cords dropped off, in one case on the eighth day, in the other on the eleventh day, without further hæmorrhage at this time. In the former of these cases the cord fell off in two days, in the latter four days, after hæmorrhage had ceased.

Deficiency in the nutrition or elasticity of the capillary walls, acute fatty degeneration of the new-born, feeble coagulability of the blood, and jaundice, are explanations sometimes given for this disease.

The self-limited character of the affection, the elevated temperature in some cases, and the greater prevalence in hospitals, are arguments of force in favor of an infectious nature; and Klebs and Eppinger have found in these cases a micro-organism (monas hæmorrhagica). In support of this view, Ritter says that while there were previously many cases yearly at the Prague Foundling Hospital, there was only one following the use of new and larger wards. The disease, as ordinarily seen, can, however, have no connection with puerperal septicæmia, for that disease is now practically eradicated from the Boston Lying-in Hospital; but it occurs independently of it, just as thrush caused by oidium lactans may get a foothold and flourish in a hospital free from septicæmia, although thrush is not common in private practice. In fact, more than two-thirds of the cases occurred in the Lying-in Hospital after the adoption of the antiseptic system.

In the *treatment* of this disease or symptom of disease many measures have been adopted, and also none at all, the latter from a feeling of helplessness in regard to it, and also, as we have shown, the erroneous belief that in all cases, even if the infant survived, it would always be subject to hæmorrhages. Bearing

in mind the brief course and self-limited character of the disease in the majority of cases, we should make every effort to control hæmorrhage and to sustain the vital powers. External bleeding from scratches or from the umbilical wound can best be checked by properly applied pressure; and although compresses for this purpose often fail, digital pressure, if intelligently directed and persisted in, is almost always successful. Instances are on record of devoted mothers and nurses, who, by holding their fingers pressed for hours to the umbilicus, have saved the infant's life. Styptics are generally unsatisfactory; and deep suturing of the umbilical wound, although in some cases successful, in others only adds a fresh source for hæmorrhage from the stitch-holes.

The value of astringents, of ergot or of mineral acids, for internal hæmorrhage, are of somewhat doubtful value. Alcohol, by increasing the power of the heart, would theoretically increase the bleeding; but, if we accept the belief in the infectious nature of the disease, it would seem in many instances to be indicated. Warmth to the extremities, perfect quietude and freedom from motion, and most careful and persistent feeding from spoon or dropper with milk drawn from the breast of the mother or wet-nurse, might tide over many otherwise fatal cases through the brief period of this disease. Antiseptic treatment of the cord would be indicated for prophylaxis.

SUMMARY.

(1) Hæmorrhage in the new-born is in nearly all cases an acute transitory affection, beginning within the first week or ten days of life and lasting from one to six days.

(2) The etiology of this form is perhaps best explained by the infectious theory.

(3) In very exceptional cases the disease is due to true hæmophilia as it is seen in older children and in adults. In a small number of cases it is one of the symptoms of syphilis or of septicæmia.

(4) The mortality from all forms is about 75 per cent.

(5) Treatment should be guided by the knowledge of the transitory and perhaps infectious character of the affection as it is seen in the majority of cases.

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Reports of Societies.

BOSTON SOCIETY FOR MEDICAL OBSERVATION.

JOHN C. MUNRO, M.D., SECRETARY.

Regular meeting of the Society Monday, June 1, 1891, Dr. J. H. McCollom in the chair.

Dr. J. A. Jeffries read a paper on

THE SOURCES OF INFECTION WITH TUBERCULOSIS.[1]

Dr. Jackson: I have nothing to add to Dr. Jeffries' paper. I think it is a most exhaustive study of all that has been written up to the present time.

It has always seemed to me difficult to understand how any observers should feel that any considerable number of cases of tuberculosis was due to intestinal infection. Certainly, clinically, the vast number of cases have the most advanced lesions in the lungs or in the upper respiratory tract; and autopsies prove

[1] See page 214 of the Journal.

the same thing. I would like to ask Dr. Jeffries if it is Baumgarten who thinks that tuberculosis is chiefly caused by infection from the gastro-intestinal tract.

Dr. Jeffries: Yes.

Dr. Jackson: He is the most prominent writer who feels that tuberculosis is due in a large proportion of cases to ingestion and not to inhalation. It seems very difficult to understand how such a man should express himself in that way.

When we come to consider the ingestion of tubercle bacilli, I think we can find, as in kissing, a much readier (or at least more probable) source for the ingestion of tubercle bacilli than in any other way. You know the enormous numbers found in sputa and in saliva. There is certainly the readiest mode of infection. That, I think, should be very largely considered in children who develop acute tuberculosis when they have been nursed by mothers in advanced phthisis.

Dr. Townsend: Did I understand that where tuberculosis occurred owing to the ingestion of tuberculous food there was always some local intestinal, or at least mesenteric lymphatic, infection?

Dr. Jeffries: No. The evidence is that probably there are a good many cases where there is no disease at point of entrance, but curiously enough there are men who claim that tuberculosis chiefly springs from the intestine, who also hold that there is a pathological product at the seat of entrance. The position they hold is difficult to explain. Where any material amount of bacilli are introduced in the food we always do find the intestines affected.

Dr. McCollom: One or two practical points are the disinfecting of the sputa, if the indirect doctrine is true, and I do not think that is carried on as thoroughly as it should be. I think very few physicians in private practice ever think of causing the sputa to be disinfected. It is a very important factor. The sputa becomes dried, and the bacilli will float in the air. In the German hospitals the consumptives carry a spittoon filled with a solution of carbolic acid, which is kept thoroughly air-tight. The man expectorates into it and closes it, so that there is no expectoration on the walls or floors of the hospitals. In this country people are constantly spitting anywhere. Go into large public gatherings, and the floor will be covered with expectoration, and a great many of these people may be suffering from phthisis in a latent or comparatively mild form, and this may be sufficient to give rise to the disease in a great many people.

Another practical point is the importance of having the streets properly watered, because there is no doubt that the dust does contain the germs of disease, and blowing about in such large quantities as is frequent, it seems to me it must very frequently cause the disease.

Dr. Jeffries: As regards the streets, it is a curious fact that the street-sweepers of Europe seem to be rather exempt than otherwise from tuberculosis.

Dr. McCollom: It is possible they may become habituated to it.

Dr. Jeffries: They hold their occupation during life, and seem to be rather better off than other people as regards tuberculosis.

Dr. C. W. Townsend read a paper on

Hæmorrhages in the New-born.[1]

Dr. Jackson: I should like to ask whether he finds in these cases small petechiæ as well as ecchymosis?

[1] See page 218 of the Journal.

Dr. Townsend: I used the word ecchymosis meaning any hæmorrhage under the skin. Many of them were very minute, very small petechiæ, in fact the majority.

Dr. Jackson: Similar to the lesions in purpura?

Dr. Townsend: Yes.

Dr. Nichols: I can recall in my own experience but a single fatal case of hæmorrhage in the new-born infant, and I remember to have recognized in this instance that the death was perhaps attributable to my failure to appreciate the gravity of the situation. The child was large, born of a healthy mother, weighed about eleven pounds, and, though forceps were applied, no unusual amount of force was necessary for extraction. There was no bleeding from the umbilicus, but as I was about to go, my attention was called to a slight oozing of blood over one zygoma, and upon examination I found that the forceps had made a superficial bruise at this point. The flowing, though slight, was persistent, and when an attempt was made to control it by means of stitches, the only result was a fresh source of hæmorrhage from the stitch-holes, which seemed, however, after a while to be controlled by firm compression, and the infant was, therefore, left with a pad bound to the cheek. Owing to a lack of intelligence on the part of the nurse, which should have been noticed and guarded against by myself, the bandage was not properly watched during the night, and there occurred a fresh flow of blood which proved fatal before a physician could be obtained.

Dr. Jackson: As far as I know the only evidence offered in the direction of the infectious nature of the disease is in the direction of the clinician, that several cases generally occur together, that cases occur in hospitals more than in private practice and run this sharp acute course.

I do not know anything about the existence of this organism that Dr. Townsend speaks of. I know that in an allied disease, purpura, the existence of an organism has been claimed very different from the one Dr. Townsend speaks of. It never has been proven, as far as I know, though one or two observers have claimed they have produced the disease in animals by inoculation of the blood. That, I think, would not hold as absolutely true, because the inoculation of healthy blood has produced ecchymosis in animals; that is, I suppose, merely mechanical.

Dr. Jeffries: As this hæmorrhage begins almost at once after birth, it seems to me, if we are to have infection, it must have been before birth; and in those cases it is hard to say how it got into the fœtus without showing itself in the mother.

Dr. McCollom: The fact that it occurs more frequently in hospitals than outside, I very much doubt, if it is not due to the fact that the cases are much more likely to be reported in hospitals than in private practice.

Dr. Townsend: I have the report of the out-patient department; and the proportion is six times greater in the hospital than outside. The cases are carefully reported by the externes.

Dr. Jeffries: Is it not probable that the cases that come on late are infectious, while those that come on early are congenital?

Dr. Munro: Is there any evidence that these occur only in children badly nourished through the placental circulation?

Dr. Townsend: Not at all. That is a cause some-

times given; and another cause is that the child is plethoric. There is no rule either way about it.

Dr. C. M. Green: I remember one case, the only case I ever saw, a child of healthy parents, the mother especially so. I delivered the child, I think, about ten years ago. It was after I had ceased my visits, and I only heard of it being called in for something else. I was told the child was lying in the cradle, and seemed perfectly well. It may have been two or three weeks old. They said they were attracted by some little noise, and went to the child and found it bleeding from the mouth. It bled to death. It was a very large child, and I delivered it with forceps. The child had done perfectly well, but died then and there. The mother has since had healthy children, but I never knew what the explanation of that case was. I do not think the child was seen by any physician.

This paper was not intended to cover, I suppose, hæmorrhages of the kind that Dr. Nichols referred to. Certainly the abrasion in his case was not sufficient to cause bleeding like that, without some bleeding diathesis I should think. But infants do have traumatic hæmorrhages which would not come under this catagory at all; small cerebral effusions, and effusions perhaps from undue violence in operating. Dr. Townsend will recall one case of breech extraction, where I think he made the autopsy and found a cerebral effusion, which, as I remember, he could not account for at the time, being a breech case. I have thought of it, and wondered what could have caused the death of the child. The head was exposed to no violence at all. The child died on the fifth or sixth day.

Dr. Townsend: Besides the cerebral hæmorrhage there were two large cephalhæmatomata which appeared. There was no difficulty in the extraction of the head, and no pressure applied to the head.

Dr. Green: That was the peculiarity, that the child should have had cephalhæmatoma, although there was no compression of the head except going through the normal pelvis; and it also had cerebral effusion. Possibly this might have been a case of hæmophilia. I have never been able to explain in my own mind why that case should have occurred, unless it were from that diathesis. Bleedings from the navel are occasionally reported and seen. I remember a case of Dr. Richardson's several years ago, where the child bled from the navel. It recovered with medical, and not surgical, treatment. There was this constant oozing from the navel, and the child was in such a dangerous state that it was watched constantly. Deep stitches were passed, and everything done in the surgical way to prevent the bleeding. I think compression was used a good deal. Possibly that helped it; but the child was put on doses of the tincture of the chloride of iron, and after hanging in the balance some days, it finally got well. It was several weeks, I think, before it was considered out of danger. I believe it had ergot also.

I recall one case where the child died from hæmorrhage from under the liver. It was a question as to what caused the bleeding; it may have been from violence, possibly from a fall, although no history could be obtained. This was a forceps case (not my own), and there was also a cerebral effusion.

It is an extremely interesting subject and I wish we knew more about it; but I think we shall do well to remember that these cases are susceptible of treatment, if they live long enough to be treated, by putting them on iron. Of course, where they run so short a course there is no time for medical treatment to have any effect.

The ordinary bleeding from the navel due to carelessness, does not come into the discussion. That is a thing we are occasionally reminded of where children have been left with one ligature which seemed sufficient, and afterwards bled seriously or fatally. I learned my lesson several years ago as regards care, from a case that I delivered with forceps. I was very busily engaged in sewing the perineum, and had forgotten the instruction I had received and always give, not to forget the navel. The nurse, fortunately for me, happened to think of it. She found the baby bleeding considerably, and yet I tied the cord as carefully as I knew how. I came to the conclusion that tie the cord as carefully as you may there is always the risk, and it should be looked at several times, as often as every fifteen minutes, up to the time the nurse takes it to wash it, and then the second ligature should be put on.

Dr. Nichols: In reading a number of cases of fatal hæmorrhages in the new-born I have been impressed with the comparatively small amount of blood that has been lost, quite insufficient to account for the shock or cause of death, and I should like to ask the reader whether his experience would or would not confirm this impression, namely the danger of the comparatively small amount of hæmorrhage.

Dr. Townsend: I think in some of these cases there may have been an error. The amount of blood from the navel may have been small, but there may have been hæmorrhage from the stomach or bowels which was still retained inside of the body, and the child practically bled to death without very much blood escaping, In the cases reported and in the cases at the hospital the babies are almost always very much blanched at death. Of course, however, the amount of hæmorrhage sufficient to kill an infant is very small compared with that in an adult.

Dr. Munro: Apropos of what Dr. Green said I should like to ask if there are any cases reported of hæmorrhages in children whose mothers had been given iron for some months before delivery, as is the custom with a good many obstetricians, and whether that would not be a preventive. Iron is notably a hæmostatic under any condition.

Dr. Townsend: I do not know. It seems to me these cases running such a definite course with elevated temperature ending with death or recovery in three or four days, form almost a definite class by themselves. Of course, in some of the cases, the hæmorrhage is simply a symptom of some other disease, as syphilis or septicæmia.

Dr. Jeffries: Was the spleen enlarged?

Dr. Townsend: In the majority of the cases the record of the autopsy is absolutely negative. In some the spleen and liver were enlarged.

The Climatologist, a new monthly journal devoted to the relation of climate, mineral springs, diet, preventive medicine, race, occupation, life insurance and sanitary science to disease, appears for the first time this month. It is edited by Drs. John M. Keating, Frederick A. Packard and Charles F. Gardiner, and thirty-one associate editors.

THE NEW YORK ACADEMY OF MEDICINE. SECTION ON ORTHOPEDIC SURGERY.

Stated Meeting, April 17, 1891, Samuel Ketch, M.D., Chairman.

Dr. Royal Whitman presented a series of cases illustrating

THE TREATMENT OF KNEE- AND ANKLE-JOINT DISEASE IN YOUNG INFANTS,

by an adaptation of Thomas's splint. He claimed that by the routine use of extension, not merely for its effect on the contracted knee, and as a factor in the production of rest, but for the purpose of retaining the brace in position, instead of using the ordinary shoulder strap, the constant shifting of the ring, which occurs in infants, is avoided, and hence, the irritation of the skin and motion of the diseased joint were reduced to a minimum. He advised the use of a brace in cases of ankle-joint disease, even when the infant has not begun to walk, on the principle that children long before they walk are making constant attempts to stand, and in creeping or otherwise, expose the joint to injury.

The brace is made of light material, with two leather straps attached to the foot-bar. The extension plasters are applied to the leg, usually below the knee, and the leg is firmly bandaged from the toes to the groin, and the brace applied with sufficient extension to hold the ring firmly in its place. The leg and brace are then firmly bandaged to one another, from the foot to the ring. Such an arrangement provides rest, compression and protection, the effect of which in painful, contracted and suppurating joints, is at once apparent. In ankle-joint disease, the foot being at a right angle to the leg, a well-fitting plaster bandage is first applied.

It seemed to the speaker that the treatment of joint disease in infancy should be carried out on the same principles as apply to older children, and that in cases of knee- and ankle-joint disease the conditions are most satisfactorily met by the Thomas brace. With ordinary care, its use was attended with no difficulty, and it was not unusual to see infants of from fifteen to eighteen months of age, walking about on the brace and high shoe, without discomfort.

Dr. V. P. Gibney said that his clinical experience had taught him that it was almost impossible to hold the limb down with plaster-of-Paris in these small children; for, notwithstanding the performance of tenotomies, as soon as the plaster becomes soft, which it will do speedily, as a result of the dribbling of the urine and from other causes, the limb will begin to flex again. This adaptation of the Thomas splint he considered an admirable one.

Dr. John Ridlon said that this method of employing traction had been used by Thomas years ago, but more recently that surgeon had preferred to straighten the cases, with or without an anæsthetic, and then put them up permanently in a straight position with absolute immobilization, and with as much traction as could be obtained by a full-length caliper splint. He thought that direct backward pressure, with a pad above and below the knee, and a strap behind the knee, was better than the method of bandaging adopted in one of the cases presented. For the ankle-joint cases he thought a metal splint was more satisfactory than the plaster-of-Paris. He had repeatedly tried plaster-of-Paris in these cases, and had found that it failed to keep the limb straight.

Dr. Judson doubted whether, in larger children, the splint shown could be relied on to secure both fixation and protection.

Dr. A. M. Phelps disagreed entirely with Dr. Ridlon as to the superiority of a metal splint over the plaster-of-Paris. He has used the Thomas splint for the past four years as a protection to the joint, but he did not approve of producing extension by it, as this caused intra-articular pressure. His plan was to reduce the deformity under ether, and then apply plaster-of-Paris. He did not think the splint exhibited any better than plaster-of-Paris for small children before they began to walk.

Dr. W. R. Townsend said that it was because they had experienced so much trouble from excoriations in the use of plaster-of-Paris at the hospital, that Dr. Whitman had devised this arrangement.

Dr. N. M. Shaffer saw no necessity for either this splint, or for plaster-of-Paris. There had been no trouble from the apparatus which he had employed in his practice, and he thought it gave even better protection than the Thomas splint. The deformity is usually made too important a factor in the treatment. A study of nature's methods would show that the deformity should be reduced by modifying, rather than by increasing the intra-articular pressure, and Dr. Whitman committed an error in attempting to reduce the deformity quickly, for, in the majority of cases, nature endeavored to warn us against this rapid reduction of the deformity, by establishing a condition of muscular resistance. The slow method of reducing the deformity, in his opinion, gave better ultimate results.

The Chairman endorsed the views of the previous speaker. Some of these cases had been stated not to have had reflex spasm, but he could not understand how this could be the case, as in his experience, spasm had been invariably present. The apparatus acted upon the principle of the simple perineal crutch, and only emphasized the necessity for using this crutch in all these cases.

Dr. Whitman, in closing, said that the only claim to originality which he made, was in the manner of holding the brace firmly against the groin. He was fully convinced that plaster-of-Paris was very undesirable for young infants, as the joint was often swollen to the size of the thigh, and the plaster speedily worked down and became loose. However beautiful might be the theory of increasing the intra-articular pressure by traction made with this splint, the fact still remained, that while the limb was being brought down, these children were comfortable, their general condition improved, and the joint diminished in size. The bandaging to which Dr. Ridlon alluded, was not for the purpose of straightening the leg, but to hold the brace firmly. He considered that the deformity *was* of much importance, and the sooner it was reduced, especially in knee disease, the better. If seen moderately early, one could be sure that recovery without deformity would occur, with the exception of some shortening.

Dr. Gibney presented a case of

ANTERIOR POLIOMYELITIS,

which had so affected the adductor group of muscles, as to cause marked deformity of the limb. When six years old, the patient was reported to have had a high fever, accompanied by inability to move the legs. This

condition rapidly improved, and then it was noticed that the child could use the limbs but little. He had first seen the case on November 16, 1887, at which time there was complete adduction of the limb, the hamstrings were considerably shortened, and there was some flexion at the hip. Shortly after, he began treatment by stretching the hamstrings, the case passed under the care of a distinguished general surgeon, who presented her to the Surgical Society as a case of congenital dislocation of the hip. She returned after a time, and the extension was resumed. On November 22, 1889, she was anæsthetized, and by an open incision over the tensor vaginæ femoris and flexors of the thigh, he was able to divide freely the contracted tissues, until the limb could be brought into good position, when he applied plaster-of-Paris from the axilla to the toes. After two or three weeks, a brace was applied. On October 22d, another operation was necessary. On March 26, 1890, the limbs were parallel, and at present, it is difficult to produce any luxation of the hip-joint, the limbs are of equal length, and the child can walk fairly well without any apparatus. He thought the case showed the advantages of protecting the weakened muscles for a long time.

Dr. Shaffer said that he wished to emphasize the important part played by the tensor vaginæ femoris, this muscle and the sartorius often being the principal opponents to good locomotion. He had seen several cases in which the general surgeon had made a diagnosis of dislocation of the hip, owing to the extreme malposition of the thigh. Division of the tensor vaginæ femoris, and of the muscles attached to the anterior spine of the ilium, is the only method of treating these cases successfully, and to make the division thorough, he preferred the open method to the subcutaneous.

A CASE OF NEUROMIMESIS.

Dr. W. R. Townsend presented such a case. A girl, fourteen years of age, having a good family history, fell on the 27th of last January, twisting the foot, and producing a slight excoriation on the ankle. She was taken to a hospital, where the injury was treated by plaster of Paris for five weeks. On removing the plaster, the foot was found to be much distorted. She then came under the speaker's care, and an examination by Dr. B. Sachs indicated that the deformity was entirely due to psychical causes. There is now a slight equinus, and the extreme contraction of the tibialis produces varus. Only a slight force is required to bring the foot into the normal position, and the patient can retain it in this position, by the power of the will, for a few moments. There had been but little improvement so far in the case, which had been treated only by the application of blisters to the lower end of the spine, and by the administration of tonics.

In answer to a question from Dr. Ridlon, Dr. Townsend said that the genitals had not been examined.

Dr. Ridlon said that he asked this question, because in a recent case, a vulvitis had seemed to be the cause of the trouble.

Dr. Shaffer said that some time ago he had presented a somewhat similar deformity of the foot, but in his case there was a rhythmical action of the muscles of the thigh.

Dr. H. L. Taylor thought the diagnosis was unquestionably correct. Some years ago he had had a very similar case, which began with a slight sprain, and which was completely cured in about one month.

Dr. R. H. Sayre called attention to the remarkable resemblance which this purely muscular deformity bore to that seen in cases which are considered to be incurable except by the removal of considerable portions of bone. In this case the bony prominences are marked, and yet the bones are not luxated.

Dr. H. W. Berg spoke of the possible medico-legal interest that might attach to such cases.

Dr. Charles N. Jones, of Brooklyn, presented a boy, six years of age, who was admitted to the Childrens' Hospital on September 10, 1890. He had a rachitic history, and all the bones presented rachitic deformity. The teeth were deficient, and the femora presented anterior and lateral curvatures, with great depression of the internal condyles. Below the knee, in both legs, there was a marked anterior and inward angular deformity of both bones of the leg.

On October 21st, 1890, he performed supra-condyloid osteotomy of both femora. The wounds were dressed antiseptically, put up in plaster splints, and suspended by weights and pulleys, as recommended in an article published in the *Annals of Surgery*, April 1889. On November 15th, he performed cuneiform osteotomy on the tibiæ and fibulæ of both legs, for the correction of the principal deformity. The wounds were dressed according to the method recommended by Von Bergmann, namely: they were thoroughly packed with iodoform gauze, dressed antiseptically, and left until the following day, until all hæmorrhage had ceased, when the bones were united with catgut sutures, the periosteum and the skin wounds sutured, and the limb enveloped in a mass of sublimate gauze. Plaster bandages and suspension were then applied as before. Recovery was uninterrupted. On January 9th, an additional section of the bones of both legs was made to correct a slight remaining deformity, and the same after-treatment was adopted. The patient presented a very tight and adherent prepuce, which was a constant source of irritation to him. At the first operation, he was circumcised. This apparently slight operation the speaker considered important, as he had found it necessary to perform it in the case of every deformity in a male child which had come under his observation.

THE PLACE OF FIXATION IN THE TRACTION TREATMENT OF HIP-DISEASE.

This was the title of a paper by Dr. Robert W. Lovett of Boston, who illustrated his remarks by the exhibition of apparatus. He said that it was a question for those who believe in the traction treatment of hip-disease, to consider whether apparatus should have as its object, simply traction, or fixation of the joint as well. This question presents itself under two aspects: (*a*) As to the advisability of using in certain cases a splint which should give better fixation than the long traction splint; and (*b*) The indications for fixation in bed, and the class of cases in which it is necessary.

The long traction-splint was introduced under the impression that it was an appliance which should give motion without friction. Later, traction in itself came to be regarded as a means of fixation, and Dr. Judson was the upholder of the view that traction furnished fixation to the hip-joint. Some experiments by the writer tended to prove that the long traction-splint was not a fixation appliance, and one worn by a boy with normal hip-joints, allowed motion of 35° in walk-

ing and sitting. The practical question arises whether such a splint furnished enough fixation, or whether in certain cases more perfect fixation of the joint is not to be desired. Certain cases do badly under treatment by the long traction-splint, and these seem to be of two sorts; very severe cases, and cases where the patients are under imperfect control, and run and play continually, producing traumatism of the joint, which results in sensitiveness, irritability and malposition.

In the hope of preventing this condition in such cases, a splint was shown which was practically a combination of the Taylor and Thomas splints. The appliance fixes the thorax, the pelvis, and the leg, and comes below the foot, ending in a traction appliance, in this way fixing the hip-joints as perfectly as possible, and at the same time making traction upon the diseased limb. The writer would advocate the use of such a splint chiefly in hospital practice, in very severe cases, and in patients under imperfect parental control. Practical experience has shown the splint to be useful in this class of cases.

(*b*) With regard to the second division of the subject — fixation in bed — the experience of the Boston Children's Hospital has been that the immediate treatment of malposition or joint sensitiveness results in a very small proportion of abscesses among the cases treated. Of 182 cases admitted in the last three years, 107 were sent to the wards on account of deformity and sensitiveness, and only 52 for abscess. In these years, the percentage of cases admitted for deformity and sensitiveness has steadily increased, while the percentage admitted for abscesses has steadily diminished. In the last six years at the Children's Hospital, among 574 new cases of hip-disease coming in that time, only 107 abscesses have developed, giving a percentage of 18.7 per cent., which is very much less than any other series of cases reported. Of Dr. Gibney's cases, sixty per cent. had abscess; in the Clinical Society's cases, sixty-nine per cent.; and in the recent cases of Mr. Marsh, fifty per cent. It has seemed that the early admission of cases was to be regarded as the preventive treatment of abscess. It would seem, therefore, that the use of a splint affording more fixation than the ordinary traction-splint was needed in severe and sensitive cases, and that rest in bed was advisable when malposition occurs, not only in order to overcome the malposition, but in the hope of preventing abscess.

Dr. Ridlon approved of the author's observations upon the traction-splint, but the outline of the splint which he had exhibited was certainly improper. During the last few years he had not found occasion to employ more traction than was obtained by the tendency of the Thomas splint to work downward. If the splint were not supported by shoulder-straps, it gave sufficient traction for the successful treatment of fractures of the upper part of the thigh-bone. He questioned very much advisability of allowing the patient to walk around, who had sufficient muscular spasm to indicate the necessity for the application of a special traction apparatus.

Dr. Shaffer thought that the author's experiments to determine the amount of motion occurring at the joint were fallacious, as they did not take into account the considerable arc of motion produced by the flexibility of the lumbar spine. He thought that his own experiments upon this point had not yet been contradicted. In these, he applied the apparatus to a healthy hip-joint on a person whose opposite joint was anchylosed. A person with an anchylosed hip can walk, or even dance, owing to the flexibility of the neighboring parts.

Dr. Judson thought that the traction-splint secured fixation but not immobilization. He thought it was important to make this distinction. Immobilization is found in union after fracture and in anchylosis, while fixation is produced by reflex muscular action and by traction. It is almost impossible to immobilize a joint by any application of mechanical surgery. Fixation implies a degree of mobility which allows a reduction of the deformity. When applied in a painful case, it has a wonderful effect of relieving the patient's distress, which is partly main and partly a sleep-destroying apprehension of disturbance of the joint.

Dr. Phelps said that as he believed it was a cardinal principle in the treatment of all joint-diseases, that the affected part should be immobilized, he could not understand what the author meant by "motion within certain limits"; he saw no reason for the joint being moved at all. During the period of pain, we all agreed that rest in bed was the proper thing, and yet, if this represented the best method of treatment, why employ a splint which would not carry out this idea? More than seventy-five per cent. recovered without deformity. Again, if extension were the proper thing, why not counteract the action of the abductors and adductors which cause the spasm, by making use of lateral traction? He did not think the statistics about abscess collected by the author carried much weight, because in Boston these cases were sent to institutions at an earlier stage of the disease than they were here.

The Chairman referred to an article by Dr. Judson, in which it was shown quite conclusively that the effect of mechanical treatment, when applied sufficiently early, was to prevent abscess, and that it even prevented the opening of many abscesses which had already formed at the time the treatment was begun. Long before the Thomas splint or the lateral traction splint were known here, Drs. Sayre and Davis obtained cures without deformity, by means of the traction apparatus commonly employed, and he would not, therefore, accept the view that almost all the cases treated by this much abused traction-splint, pursued an unfavorable course, and ended in deformity.

Dr. Berg spoke in favor of the use of apparatus which did not require any elaborate fitting; for, as he said, "Some braces require so much fitting that they rarely fit."

Dr. H. L. Taylor said that he was glad to be able to approve nearly all the points made by the author in his excellent paper. The hip-joint required some form of fixation as well as extension when acutely inflamed. In most cases, the amount of fixation afforded by the long counter-extension splint, combined with short periods of rest in bed, when necessary, was sufficient. Dr. C. Fayette Taylor had never claimed that his long splint gave positive immobilization of the hip, but the speaker was surprised at the range of motion found under its use by Dr. Lovett, and would wait for further experiment before admitting that the question of the amount of motion allowed was settled. In very bad or unruly cases in dispensary practice, the apparatus shown by Dr. Lovett would no donbt prove useful. The speaker would emphasize the advantage of properly applied counter-extension in the progressive stage of hip-joint disease, in order to restore the hygiene of the joint and prevent deformity.

DR. LOVETT said that he had used one perineal pad instead of two, because his object had been to find the fixative power of traction, and not of any special splint; and he thought his experiments, as far as they had gone, were in the proper direction. With regard to the question of abscess, he should have added, that the 170 cases of abscess mentioned included those occurring in cases which had been admitted for a number of years past, at least since 1880.

Recent Literature.

Historical Sketch of the University of Maryland, School of Medicine (1807–1890). With an Introductory Chapter, Notices of the Schools of Law, Arts and Sciences, and Theology, and the Department of Dentistry, and a Catalogue of Medical Alumni. By EUGENE FOUNTLEROY CONDELL, M.D. Baltimore, Md.: Isaac Friedenwald. 1891.

This volume is primarily interesting to the Alumni of the University and to those living in Maryland and Virginia, but there is a great deal in it to interest those living in other States and all engaged in medical education, those desirous of becoming practitioners of medicine, and those who may be subjects of treatment. The history is long and full of detail, and at the commencement we are told that the first indication of a tendency towards a community of action and interest in the profession, was an interesting discussion in the newspapers upon the subject of medical reform and the suppression of quackery, which began in 1785 and was carried on for several years.

In July, 1788, a medical writer suggested that a law be passed restricting the practice of medicine to those duly qualified, and at the close of this year a petition was in circulation for presentation to the general assembly, praying that body to introduce measures for the better regulation of medical practice in this community. To this call, it is significantly added, that empirics are most particularly prevalent in Baltimore. What would have been the writer's astonishment and disgust, could he have foreseen that the same statement would be equally true one hundred years later!

The medical society of Baltimore was formed in 1789 and lectures delivered the following winter, but it was only in 1807 that a bill of considerable length, with twenty paragraphs, was passed by the Legislature, incorporating the college, and with this preamble, "That, whereas it appears to this General Assembly that many benefits would accrue, not only to the State of Maryland, but to many other parts of the United States, from the establishment of a seminary for the promotion of medical knowledge in the city of Baltimore," etc. A board of regents, composed of physicians, was thus created, which met very soon after and chose six professors who commenced their work immediately, and this school has continued with success, though encountering many obstacles, to this day. The Legislature at one time interfered, and modified in important particulars, the charter, creating a new board of trustees, but after some years there was a law-suit and the original charter was reaffirmed. A great part of the time the management of the school was almost entirely in the hands of medical men, and these contributed much to the success of the institution. At an early date, a hospital, under the control of the medical faculty, was established.

We have short biographies, with photographic likenesses, of the various professors, many of whom were natives of and trained in New England. Dr. W. R. Smith was a very successful professor and manager of the school for many years, and contributed very largely to its success. His father, Dr. Nathan Smith, was, in his day, a pioneer of medical education; by his efforts a medical school was established in connection with Dartmouth College, another in New Haven, and another in Maine in connection with Bowdoin College. His last years were spent in New Haven as a professor in the medical school of Yale University. By such a father and with such surroundings was trained the most distinguished and efficient teacher of the University of Maryland. Dr. Roby was professor of anatomy and surgery at Bowdoin College, and for nine years also occupied the chair of the Theory and Practice of Medicine, of Materia Medica and Pathological Anatomy at Dartmouth College. For eighteen years he was the Professor of Anatomy and Physiology in the University of Maryland, and during two years he also delivered the lectures on Theory and Practice; he was a very successful and popular teacher. Dr. John D. Wells, of Boston, was the professor of anatomy of Bowdoin College, and having great reputation as a teacher and lecturer, was appointed the professor of anatomy in the University of Maryland, but held the office only one year, death terminating his labors. Dr. Benjamin Lincoln, one of the most accomplished teachers of anatomy and physiology, of his time, succeeded Dr. Wells in the discharge of the duties of the anatomical chair. Dr. Elisha Bartlett, of Lowell, Mass., held the chair of Theory and Practice, resigning a position in the Transylvania University. Dr. Dunglinson and Dr. Patterson were professors coming from Great Britain, Dr. Geddings from South Carolina. Many remarkable men have been connected with this school.

Text-Book of Bacteriology. By CARL FRAENKEL, M. D., Professor of Hygiene, University of Koenigsburg. Third edition. Translated and edited by J. H. LINSLEY, M. D., etc. 8vo, p. 376. New York: William Wood & Co., 1891.

Since its first publication, Fraenkel's Bacteriology has been the best concise text book to be found in the German language, and any one who has found the difficulty surrounding all teachers of the subject in this country will welcome the translation of the work here presented to us. It seems to us, however, that the change from the lecture form of the original, and the omission of the marginal notes, are a loss and not a gain. The book is likely to find its special usefulness in laboratory work, and for this purpose the omitted notes are of great value. The volume is well printed and bound.

H. C. E.

Bacteriological Technology for Physicians. With 72 Figures in the text. By DR. C. J. SALOMONSON. Authorized translation, from the second revised Danish Edition, by WILLIAM TRELEASE. New York: William Wood & Co. 1890.

Salomonson's hand-book is a valuable addition to a laboratory library. Like most others of its kind, it contains hints that are not found elsewhere, but that are presented in a very simple and practical way. For so small a text-book it presents the subject exceedingly well; certain of its suggestions in regard to apparatus and methods will be very useful to the worker.

THE BOSTON

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THE SEVENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

The recent International Congress of Hygiene and Demography, held in London, August 10 to 17, was the seventh of the series. The first Congress owed its initiative to the Belgians, and was held in Brussels in 1876. At this meeting Dr. Lionville, who represented the French Government, proposed that a permanent organization should be effected and that meetings should be held at stated intervals. The next meeting was held in Paris in 1878, when the organization was perfected, and it was decided to meet every two years. Meetings have been held twice in Paris, in Turin, in Vienna and Berlin. Interest in the earlier meetings was mainly confined to the continent, England sending a comparatively small representation, until the previous meeting, which was in Paris at the time of the last French Exhibition.

England's real concern in and contributions to such subjects as general hygiene, preventive medicine and vital statistics have been so great that she certainly cannot afford to abstain from coöperation with her neighbors and with other nations in any movements for the discussion and furtherance of these objects. This seems to have been the purpose in view when it was decided to have the present Congress held in London, and anticipations of a remarkable meeting were both encouraged and indulged. A very elaborate and extensive programme was issued, the gracious patronage of the Queen was secured, the Prince of Wales accepted the Presidency and promised to open the Congress with an address, and the Lord Mayor to entertain the delegates at Guildhall; a large number of the leading corporations and sanitary authorities of Great Britain appointed delegates and contributed funds. The result was a tremendous foreign and native attendance.

The occasion, which should have been a great and memorable one in every way, was unfortunately, if we may trust the reports of the British journals at hand, but barely saved from failure in some important respects. The very qualities which, of all others, one would have expected to find — executive capacity and prevision — seem to have been absent. The accounts of the foreign delegates arriving in London Saturday and Sunday preceding the Monday of opening, are almost pathetic for one who knows what the London Sunday may be for the stranger. No bureau of information was to be accessible before Monday. The entrance to Burlington House, the place of meeting, presented its iron gate closed, and the delegates seem to have found the only semblance to a friendly and hospitable welcome at a French café on Regent Street.

The arrangements on Monday seem to have been extremely inadequate. One journal says: "It is, however, impossible not to refer to what has already been the subject of much public comment, as well as very general dissatisfaction, in the relative break-down of the arrangements made by the Secretary-General. There was no reception or reading room worthy of the name, but only an ill-arranged and embryonic office, which almost wholly occupied a quadrangle of bare deal counters; at this, on the opening day, a struggling mass of members, who became almost combative, attacked a small cohort of imperfectly-drilled clerks, nearly all of whom seemed incapable of speaking or understanding any foreign language, and each of whom seemed only to know a little about the particular cards with which he was entrusted, and to be quite unable to afford any general information or to refer to any inquiry office, or to any interpreters who could facilitate the general and natural hunger for information and invitation cards. . . . A curious want of perspective was apparent in the whole design by the executive of the arrangement of the proceedings, and a singular feebleness in carrying them out. Whether by inadvertence or from higher knowledge, of which the character has not been explained, the Congress was devoid of any features of *ensemble*. At the first meeting the proceedings were purely formal, nor were any occasions provided such as those which gave so much interest to the last international medical congresses of London and Berlin, at which the great scientific topics of the day should be handled on successive days in general meeting, by one or two eminent representative speakers from each of the countries represented. The result has been a curious incoherence and absence of unity in the proceedings, while the public are left unguided by any indication of the relative importance of the great subjects submitted for argument. The result has been a somewhat ill-digested jumble and a palpable want of perspective in the sanitary landscape presented to the public view."

The demand for cards to the Lord Mayor's reception far exceeded the supply, so that it was found necessary presently to draw for the remaining invitations, and in this lottery the foreigner was given no preference over the native. Notwithstanding the friendly countenance of and participation in the meeting by the Queen and Prince of Wales, the official repre-

sentatives of the Local Government Board, the Bureau of Health, were conspicuous by their absence.

Though the Congress evidently failed in important respects to be all that it should have been, such a gathering of men representing such subjects from all civilized countries could not fail to make many contributions, both directly and indirectly, to the questions for the consideration of which it was called.

Sir Joseph Fayrer presided at the important Section of Preventive Medicine, and delivered the address, in the course of which some striking comparisons were made between the state of England in the Elizabethan and in the Victorian age. In regard to the influence exerted by the sanitary measures in the present century he states that:

"Under the improved system of sanitary administration which now obtains, and is gradually developing to a greater state of perfection, the sanitary administration of every district in the country is entrusted to the care of duly qualified health officers — a system from which excellent results have already accrued, and from which better still may be anticipated. The records of the past fifty years prove the influence exerted by sanitary measures on vital statistics. The first reliable tables from which the expectancy of life may be derived, show that in 1838 to 1854 it was for males 39.91 years, for females 41.85 years; by the tables of 1871 to 1880 it had increased to 41.35 for males, and 44.66 for females. It is shown also that the expectation of life increases every year up to the fourth year, and decreases after that age. For males up to nineteen years it is higher by the last tables, but after that age it is higher by the old table; for females it is greater by the new table up to forty-five, but after that age it is less. The improved sanitation saves more children's lives, but the conditions of gaining a living are harder than they were at the time of the first table, which accounts for the expectancy of life for adult men being less. Women remain more at home, where the better sanitation tells, and are not subject to quite the same conditions as men, so that their expectancy of life is greater than by the old tables up to the age of forty-five. A further proof of the effects of sanitary work is a decreased death-rate. Let us compare the death-rates of England during past times with the present: whether they be equally significant for other countries I cannot say, but these, at all events, sufficiently prove the point in question.

DEATH-RATE.

1660-79	80 per 1,000	1870-75	20.9 per 1,000
1681-90	42.1 "	1875-80	20.0 "
1746-55	35.5 "	1880-85	19.3 "
1846-55	24.9 "	1885-88	18.7 "
1866-70	22.4 "	1889	17.85 "

"In some parts of England, where the main object is the recovery or maintenance of health, the death-rate is down to 9 per 1000, while in others, where the main object is manufacture and money-making, it is as high as 30 per 1000."

The population of London to-day (5,600,000) is considerably greater than the entire population of the whole of England (4,000,000) at the time of Queen Elizabeth, and is probably the greatest congregation of human beings the world has ever seen. London has more inhabitants to-day than have Paris, Berlin, Vienna and Rome combined. Sir John Coode, in the Presidential Address before the Section of Engineering in relation to Hygiene, touches somewhat upon the same ground as Sir Joseph, but from the engineer's point of view. He emphasizes the vastness of London by the statement that the streets and roads within the metropolis, if placed end to end in one continuous line, would measure about 2,500 miles, equal to the distance from London to Land's End, and thence across the Atlantic Ocean to the mouth of the Gulf of St. Lawrence in Canada on the west, or, going eastward, would extend across the entire continent of Europe, and beyond the Ural Mountains into Asia. The water supplied to its people is conveyed through pipes, the united length of which is about 4,760 miles. The total volume of water delivered for domestic purposes only in 1890 was 64,000,000,000 gallons (290,623,000 cubic metres). For raising this large quantity the companies employed no less than 184 steam-pumping engines, having an aggregate of 21,659 horse-power.

In regard to the drainage of London, Sir John says: "Whilst admitting that extensive drainage works have been executed, and that large expenditure has been incurred for improving the health of London, it cannot yet, by any means, be said that all has been done which might be done in this direction. Nor will it be possible to say as much as long as the sewage of the metropolis is allowed to flow into any part of the Thames without previous purification by the most perfect method as yet known — that is, by being filtered through land. The only alternative would seem to be the conveyance of the sewage to the sea-coast beyond the mouth of the estuary of the Thames. Nevertheless, and notwithstanding the room which exists for further improvement in the disposal of its sewage, the reduction which has been brought about in the death-rate of London in modern times is as noteworthy as it is satisfactory."

The real value of this Congress will probably become more evident as the great contributions to it become accessible, and the petty annoyances to which individuals were subjected will be forgotten. We expect next week to publish the account of our special correspondent.

A NATIONAL ASSOCIATION OF MILITARY SURGEONS OF THE NATIONAL GUARD.

A CALL has been issued to the surgeons and assistant-surgeons of the National Guard of the United States to meet in Chicago, on September 17th, 1891, at the Leland Hotel, for the purpose of organizing an Association of Military Surgeons of the National Guard of the United States, for the advancement of military and accidental surgery, and all things per-

taining to the health, usefulness and welfare of the civilian soldier.

During the last ten years there has been a marked and growing improvement in the personnel of the citizen soldiery; not alone the State, but the National Government has apparently recognized that upon this body of men would devolve in time of need the duty of national protection, as well as the minor duty of protection from mob violence, with which our large cities are constantly menaced.

The medical department of our National Guard is composed of earnest and zealous men, who are ambitious for the perfection of the Volunteer Militia of the various States, and it is proposed at this meeting to unite their mutual interests, and to bring before them such subjects as will be useful to the individual surgeons and their respective commands. Many of the surgeons are well-known men in civilian life, and bring to their military work new and fresh ideas, which have already in some instances been found to be of value. In Massachusetts the Ambulance Corps have brought into use a system of handling wounded which is well worthy of consideration.

There are many subjects in which a consensus of opinion of surgeons would be of value; as, for instance, the necessity and practicability of a physical examination of all Volunteer Militia or National Guards. At present, in some of the States, a physical examination is enforced, whereas in others no such examination is held, for apparently the reason that enlisting-officers are anxious to enlarge their commands.

The bill of dress which is given to the National Guards is one open to improvement. At present the men are arrayed in a uniform which is worn in our temperate zone in January and in July. As a matter of fact, the greater part of the work done by the National Guards is performed under a semi-tropical sun, and hence a bill of dress should be provided for this work. In the State of Ohio such provision is made, and the men in summer are put into a suitable uniform to withstand the heat of the sun.

The question of the proper supply of food to the militiamen is an active question. Further, the relation of the medical department to other departments, notably the quartermaster's, is a subject which might well be discussed.

The first treatment of wounded is a subject that is by no means threadbare, and a score of other practical questions will naturally arise for consideration.

In fact, the encampments of the State troops, as now conducted, are practically "schools of instruction;" and here an opportunity is afforded for the trial of ideas which may be found of value, and a meeting together of the medical gentlemen connected with the various State Militias cannot but be of great value. Various State Associations of National Guard Surgeons have been or are being formed; but our country is so large, its interests so varied, that on any mutual subject of interest the formation of a National Association ought to be productive of national good.

MEDICAL NOTES.

The Medical Press Association. — It is proposed to have a meeting and conference of this association in St. Louis during the meeting in that city of the Mississippi Valley Medical Association, on October 14th, 15th and 16th.

Cholera. — In Mecca 33 cases of cholera were reported July 13. Owing to the presence of a number of pilgrims the disease spread rapidly, and, by July 19, 360 persons were affected. Cholera has also appeared in Abyssinia and in the vicinity of Mt. Atlas.

The Popular Impression of Leprosy. — Dr. Cyrus Edson, chief inspector of contagious diseases of the New York City Board of Health, presents in the *North American Review* his reflections concerning the sensational articles that appear from time to time in the secular press on "that dread scourge, leprosy." He properly deprecates these articles as essentially wide of the truth and harmful to the uninformed populace.

Leprosy in Jamaica. — Dr. Donovan, in his annual report to the Governor, on the Lepers' Home, Jamaica, estimates the leper population of the island at 450, or 1 leper to 1,380 of the population. Pending general legislation on the question of isolation, he recommends a prohibitive enactment against lepers keeping provision stores or being employed therein, or in the preparation of food; that no leper be allowed to engage in any of the following vocations, namely, baker, butcher, fisherman, tailor, school-teacher, etc.

Yellow Fever. — A serious outbreak of yellow fever has occurred this season in Vera Cruz. For some years that town had enjoyed comparative immunity from the disease. During the three years ending December 31, 1889, there were only nine deaths from yellow fever, or three a year. Last year the mortality rose to thirty-seven, a light record in comparison with the records of previous years.

Membership in the American Medical Association. — This is obtainable, at any time, by a member of any State or local Medical Society which is entitled to send delegates to the Association. All that is necessary is for the applicant to write to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., sending him a certificate or statement that he is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues. Attendance as a delegate at an annual meeting of the Association is not necessary in order to obtain membership. On receipt of the above amount the Journal of the Association will be sent regularly.

Recent Appointments on Different Medical Faculties. — The following appointments have been announced: Victor C. Vaughan, M.D., dean of the faculty of the medical department of the University of Michigan; Henry V. Wilson, M.D., recently in charge of the United States Fish Station at Wood's Holl, professor of biology in the University of Carolina; H. M.

Whelpley, M.D., professor of physiology and histology, director of the Histological Laboratory, and Secretary of the Missouri Medical College; Alexander C. Abbott, M.D., assistant director of the Hygienic Institute soon to be opened in Philadelphia; G. H. F. Nuttall, M.D., assistant in pathology and bacteriology in the Pathological Laboratory of the Johns Hopkins Hospital; Albert A. Ghriskey, M.D., assistant in bacteriology in the Hygienic Institute of the University of Pennsylvania: Henri A. Lafleur, M.D., assistant to the chair of practical and clinical medicine in McGill University, Montreal; Fred. J. Brockway, M.D., one of the demonstrators of anatomy in the College of Physicians and Surgeons, New York.

Experiments in Gunshot Wounds. — The army surgeons who have been attending the course of operations under the direction of Professor Kocher, of Berne, says the *Lancet*, have just been studying the destructive powers of the new Swiss rifle. In their presence have been practised several series of rifle shots, at ranges of from sixty to six hundred metres, with bullets proportionately varying in velocity. Among the objects fired at were materials of various kinds, including osseous structures and pieces of wood filled with liquid, in order to take note, by way of analogy, of the effects of the bullet on the living subject. These experiments have amply confirmed what has long been practically admitted, that at high velocities the bullet discharged from small bore firearms produces effects analogous to those of an explosive projectile.

BOSTON AND NEW ENGLAND.

Boston City Hospital. — The Trustees of the Boston City Hospital have investigated the charges which were lately brought against the hospital management, the most serious of which related to overworking the nurses and attendants. These charges originated with a former hospital attendant, who we learn has been discharged. The report of the trustees exonerates the superintendent, and states that there are few hospitals in the country in which the staff of nurses is larger in proportion to the number of patients, or where the attendants are better remunerated.

Medical Practice in Connecticut. — The *Monthly Bulletin of the Connecticut Board of Health* contains the following reply, sent to a doctor inquiring of a State official if he would be allowed to practise in Connecticut by registering his name and the college from which he graduated: "Sir: Anybody can practise medicine in Connecticut. You do not need to register; you do not need a medical diploma; you do not need to know the difference between opium and peppermint; you do not, indeed, need to know anything. You can simply come and live here, and begin to practise. The laws of Connecticut will sustain you in collecting your fees for professional services, if you render any which you choose to call such. But if you undertake to carry me or my trunk to the depot for pay, you must get a license.. If you peddle matches or peanuts, you must get a license. If you collect the swill from your neighbors, to feed your pigs, you must get a license. If you want to empty your cesspool, you must get a license. But you can practise medicine in Connecticut *without a license*."

NEW YORK.

The Death-Rate. — The number of deaths reported in the city during the week ending August 15th showed a considerable increase in mortality, due to the hot weather that prevailed. There were 1,005, representing an annual death-rate of 31.08 per thousand of the estimated population, as against 23.61 for the previous week. Much of the increase is naturally to be found in the infant mortality, which rose from 380 to 492; and out of 234 deaths from diarrhœal diseases, 211 were in children under five years of age. About 100 deaths were due to exhaustion and sunstroke, and there was one case of fatal sunstroke in which death was at first supposed to be due to suicide, as a letter was found on the man's person indicating that he intended to commit suicide. At the autopsy, however, it was ascertained that the effect of the intense heat had anticipated his intention.

Two Cases of Trichinosis. — During the past week two cases of trichinosis have been reported. The patients were a mother and son living in a crowded down-town tenement-house, and they contracted the disease by eating cheap ham. At last accounts both were improving.

Leprosy. — Two Chinese lepers have been taken by the health authorities to North Brothers Island, where they will remain for the present in a finely equipped hospital tent. It is probable that they will eventually go back to China. In his report on these cases Dr. Cyrus Edson, Chief of the Bureau of Contagious Diseases, says: "The action now necessary for the Board of Health to take in the premises turns upon the contagiousness of leprosy. That the disease is contagious under certain circumstances numerous competent medical observers assert. Among these is the discoverer of the bacillus lepræ, Dr. R. Armener Hamsen. . . . The conditions favorable to the spread of leprosy are those existing in the so-called Chinese quarter in this city. Here we have a population consisting of people who are admitted by all authorities to be susceptible to the disease, among whom it is prevalent, by whom many claim it has been introduced into countries previously free from leprosy, as, for example, the Sandwich Islands and Australia." Dr. Benedict, an inspector of the Board of Health who was, at the request of the Newark Board of Health, sent to that city to investigate an alleged case of leprosy, has reported that the case is a well-developed one and that the patient is a Chinaman.

Diphtheria. — Two of the medical staff of the Board of Health, Drs. Talley and Steele, have contracted diphtheria during the past week while engaged in the performance of their duties in the tenement-house region.

Miscellany.

A LETTER FROM DR. OLIVER WENDELL HOLMES.

The editor of the *Australasian Medical Gazette*, having seen a notice of a paper by Dr. Oliver Wendell Holmes, on the "Physiology of Quacks," forwarded to him in February last copies of the reports of and evidence taken by the Select Committee of the Legislative Council on the practice of medicine and surgery in New South Wales. He did this on the presumption that this celebrated author, having written on the subject, would feel interested in the life history of typical specimens of the same genus, as told by themselves. The subjoined letter was received in reply and alludes to his continued interest in matters relating to the medical world.

BOSTON, April 25, 1891.

My Dear Sir;—I thank you most cordially for the very important and interesting papers relating to quackery as it appears in your great colony.

Although it is a very long time since I have practised medicine, I retain my interest in all matters relating to the profession, and am glad to add these valuable documents to my library, for the present, but to go eventually with the rest of my medical books, which I gave some years ago to the Boston Medical Library.

Believe me, Dear Sir,

Very truly and gratefully yours,

OLIVER WENDELL HOLMES.

The Hon. JOHN M. CREED,
Sydney.

MEDICAL ORTHOGRAPHY.

In an editorial article on the spelling of medical words, the *Medical News*, after calling attention to the tendency, especially in America, to simplify the spelling of certain words, and the dislike of the "Umlaut" and conjoined vowels, announces that the following rules have been adopted by the staff and its proof-readers:

(1) The English equivalent of the Greek αι (as in παιδος, etc.) will be *e* instead of the elder form *æ*. For example: Hemorrhage, Hematoma, Hemorrhoids, Anesthesia, Anesthetic, Gynecology, Anemia, Pyemia, Septicemia, Etiology, Orthopedic, Pediatric.

(2) The Greek αι will be represented by *e*, instead of *æ*. For example: Edema, Esophagus, Cecum, Homeopathy, Gonorrhea, Otorrhea, Apnea, Dyspnea.

(3) Liter, Center, Meter, Fiber, etc, will be so written. (Chancre is correct — for a special reason.)

(4) Gram, Previa, Precordia, Fetus, Fetor, Fetid, Licorice, Dram, Labor, Rigor, Color, Gluteus, Gluteal, Ozena, Rachitis, Rachialgia, etc., are here properly written.

(5) Leucomaïne and Ptomaïne should be written with the dieresis.

(6) Unless we are brave enough to do without authorities, we shall have to submit somewhat longer to Cæsarean, Rhythm, Nævus, Frambœsia, Amœba, Pharmacopœia.

In medical words there is generally no true etymology. They did not grow out of the Greek, but the Greek words were seized upon to serve as symbols and aids in forming new words, as it were with malice prepense, and often with a laughable ignorance of or indifference to the roots and laws of word-formation.

SULPHURING OR BLEACHING DRIED FRUIT.

Dr. JOEL W. SMITH, in a paper on this subject,[1] points out the dangers of the process.

As fresh fruit is not always obtainable, various methods for preserving it are in use, drying being one of the oldest and best for many fruits. Sometime ago sun or air drying was the only method for market. Then it was found that more rapid drying by artificial heat, with or without the addition of sugar, was a cleaner method, safer against fermentation and decay, retained the flavor better, and the fruit was also lighter colored than when sun or air dried. The present evaporators are only an enlargement of the idea of such more rapid drying, while canning consists in the exclusion of the microörganic germs of fermentation.

It is about fifteen years since the sulphuring or bleaching dried fruit began. At first only the uniform light color was sought, as in apples, pears, etc., but for some years past nearly all of the large evaporating establishments have "sulphured" all kinds of fruits and some vegetables, and now much of the California sun-dried fruit for market is also treated in the same manner. The light color, especially of apples, early attracted attention, thus materially increasing the price of such fruit. Fruit so treated is said to dry more readily. While the apparent change is only in color there is a loss of the natural fruit flavor, even by the most careful sulphuring.

The bleaching process is the result of the action of sulphurous acid.

Investigations have proved the presence of sulphate of zinc in all samples of fruit where zinc-surfaced trays were used to hold the sulphured fruit while drying.

The advantages claimed are that sulphured fruit dries quicker, looks better, keeps better, and sells better. It makes ripe, unripe, and poor fruit look alike. The slightly yellowish-brown color of unbleached dried fruit is an evidence of ripeness, good quality, and proper drying. The more rapid the drying the lighter will be the color, and the fruit will keep well if at once properly excluded from the air.

THERAPEUTIC NOTES.

Creolin for Dysentery. — Dr. E. W. Watson[2] reports that in several cases of dysentery, serous diarhœa and summer complaint, very good results were obtained by large enemata of creolin, one drachm to a pint of water.

A Cheap Disinfectant.[3] — The nitrate of lead is the cheapest disinfectant known that fulfils its intent. It does not, however, prevent putrefaction. The chloride of lead is much more effective in all directions. It is made by dissolving a small teaspoonful of nitrate of lead in a pint of boiling water; then dissolve two full teaspoonfuls of common salt in eight quarts of water. When both are thoroughly dissolved, pour the two mixtures together, and when the sediment has settled you have two gallons of clear fluid, which is the saturated solution of the chloride of lead. A pound of nitrate will make several barrels of the liquid. The nitrate of lead costs from eighteen to twenty-five cents a pound at retail.

[1] From the forthcoming volume of Transactions of the American Public Health Association.
[2] Therapeutic Gazette, August.
[3] Monthly Bulletin, June.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 15, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	1005	492	30.90	11.60	23.60	1.20	2.70
Chicago	1,099,850	631	363	38.69	6.40	24.64	0.16	2.08
Philadelphia	1,046,964	532	259	26.98	8.17	20.14	1.90	3.23
Brooklyn	806,343	463	238	26.18	8.58	19.36	1.10	1.54
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	259	124	19.05	7.02	—	.39	.39
Baltimore	434,439	229	108	33.88	11.00	26.64	.88	2.20
Cincinnati	296,908	143	49	21.70	14.70	14.00	4.90	2.80
Cleveland	262,000	147	92	40.80	3.40	36.72	1.36	2.04
Pittsburg	240,000	157	85	36.48	6.40	21.12	5.12	4.48
Milwaukee	240,000	149	103	44.85	3.35	32.83	1.34	4.69
Washington	230,392	138	56	27.36	11.74	19.14	2.88	1.44
Nashville	76,168	34	7	34.28	5.88	20.58	2.94	2.94
Charleston	65,165	35	14	20.00	11.40	5.70	5.70	—
Portland	36,425	13	3	30.76	23.07	30.76	—	—
Worcester	84,655	41	25	36.60	7.32	24.40	—	9.76
Lowell	77,696	59	27	34.00	3.20	34.00	—	—
Fall River	74,398	52	36	42.24	3.84	32.22	—	—
Cambridge	70,028	33	14	33.33	9.09	27.27	—	3.03
Lynn	55,727	29	19	51.75	6.90	44.85	—	—
Lawrence	44,654	23	12	30.45	4.35	30.45	—	—
Springfield	44,179	15	7	59.94	—	33.33	13.33	—
New Bedford	40,733	35	21	37.60	—	44.15	2.85	—
Salem	30,801	16	8	31.25	6.25	31.25	—	—
Chelsea	27,909	13	5	—	7.69	—	—	—
Haverhill	27,412	10	4	10.00	20.00	10.00	—	—
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	—	—	—	—	—	—	—
Gloucester	24,651	9	6	—	—	—	—	—
Newton	24,379	9	3	11.11	11.11	11.11	—	—
Malden	23,031	5	4	40.00	—	40.00	—	—
Fitchburg	22,037	14	12	64.26	—	64.26	—	—
Waltham	18,707	7	2	28.56	14.28	28.56	—	—
Pittsfield	17,281	5	3	80.00	20.00	80.00	—	—
Quincy	16,723	9	7	55.55	—	55.55	—	—
Newburyport	13,947	5	2	40.00	—	40.00	—	—
Medford	11,079	4	2	—	—	—	—	—
Clinton	10,494	—	—	—	—	—	—	—
Hyde Park	10,193	1	1	—	—	—	—	—
Peabody	10,158	4	3	50.00	—	50.00	—	—

Deaths reported 4,324: under five years of age 2,215; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 1,308, consumption 371, acute lung diseases 202, diarrhœal diseases 975, typhoid fever 111, diphtheria and croup 99, whooping-cough 38, scarlet fever 33, measles 18, cerebro-spinal meningitis 17, malarial fever 17, puerperal fever 3, erysipelas 1.

From whooping-cough Brooklyn 7, New York and Pittsburgh 6 each, Baltimore 5, Philadelphia and Milwaukee 4 each, Washington 2, Chicago, Boston, Cleveland and Lynn 1 each. From scarlet fever New York 14, Brooklyn 7. Chicago 4, Philadelphia and Milwaukee 3 each, Baltimore and Springfield 1 each. From measles New York 8, Chicago 6, Pittsburgh and Milwaukee 2 each. From cerebro-spinal meningitis Chicago 6, Brooklyn 4, Washington 3, New York, Philadelphia, Worcester and Lynn 1 each. From malarial fever New York 5, Baltimore, Nashville and Charleston 3 each, Philadelphia, Pittsburgh and Springfield 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending August 1st, the death-rate was 19.6. Deaths reported 3,544: acute diseases of the respiratory organs (London) 173, diarrhœa 410, whooping-cough 92, diphtheria 46, measles 44, scarlet fever 31, fever 30.

The death-rates ranged from 9.9 in Brighton to 35 8 in Preston, Birmingham 17.8, Bradford 18.5, Hull 21.3, Leeds 23.0, Leicester 22.7, Liverpool, 24.6, London 20.5, Manchester 17.9, Nottingham 12.3, Oldham 18.2, Sheffield 20.0, Sunderland 19.9, Wolverhampton 18.3.

In Edinburgh 15.5, Glasgow 18.6, Dublin 18.3.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending August 8th, the death-rate was 19.1. Deaths reported 3,439: acute diseases of the respiratory organs (London) 191, diarrhœa 417, whooping-cough 68, measles 61, diphtheria 33, fever 20, small-pox (Leeds) 1.

The death-rates ranged from 12.1 in Derby to 30.9 in Preston, Birmingham 16.6, Bradford 14.4, Hull 16.3, Leeds 21.2, Leicester 21.3, Liverpool 20.2, London 20.2, Manchester 16.8, Nottingham 19.6, Sheffield 19.1, Sunderland 21.5.

In Edinburgh 12.3, Glasgow 19.3, Dublin 16.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 15, 1891, TO AUGUST 21, 1891.

Lieutenant-Colonel JOSEPH C. BAILEY, assistant medical purveyor, granted one month ordinary leave, in extension of sick leave.

CHARLES M. GANDY, assistant surgeon U. S. Army, will, upon the final adjournment of the Army Medical Board, resume his leave of absence.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 22, 1891.

W. R. DUBOSE, passed assistant surgeon, ordered to duty at Naval Academy, Annapolis.

G. E. H. HARMON, surgeon, detached from Naval Academy, Annapolis, and wait orders.

HOWARD WELLS, surgeon, ordered for temporary duty at Naval Station, New London.

A. A. HOEHLING, medical inspector, J. B. PARKER, surgeon, O. D. NORTON, passed assistant surgeon, ordered to Naval Academy, Annapolis, September 3d, to examine physically, candidates for admission to the Naval Academy.

DEATHS.

GEORGE HINCKLEY LYMAN, M.D. (Penn. 1843), M.M.S.S., died in London, August 19th.

JOSEPH G. S. HITCHCOCK, M.D. (Harv., 1850), M.M.S.S., formerly of Foxborough, died at Clarendon Hills, August 23d, aged sixty-eight.

HIRAM H. ATWATER, M.D. (Vt., 1851), of Burlington, Vt., died August 19th, aged sixty-three. He was for several years Physician to the Mary Fletcher Hospital, Instructor in Obstetrics at the University of Vermont, Health-Officer of Burlington, and Commissioner of the Insane.

BOOKS AND PAMPHLETS RECEIVED.

Trichina Spiralis. By Dr. H. M. Whelpley, St. Louis.

Hernia in Infancy, and its Treatment. By W. B. De Garmo, M.D. Reprint. 1891.

Second Report of the Superintendent of the Johns Hopkins Hospital, for the year ending January 31, 1891.

Du Paludisme et de Son Hématozoaire. Par A. Laveran, Professeur à l'Ecole du Val-de-Grâce, etc. Paris: G. Masson. 1891.

Eleventh Annual Report of the State Board of Health of New York. Transmitted to the Legislature, February 20, 1891. Two volumes.

Injury to the Thoracic Duct, with an Unique and Inevitable Death by Inanition. By Alvin Eyer, M.D., Cleveland, O. Reprint. 1891.

The Association of American Anatomists, History, Constitution, Membership, and the titles and abstracts of papers, for the years 1888, 1889, 1890.

Report on Cholera in Europe and India. By Edward O. Shakespeare, A.M., M.D., Ph.D., United States Commissioner. Washington: Government Printing Office. 1890.

Leçons de Thérapeutique. Par Georges Hayem, professeur de thérapeutique et de matière médicale à la Faculté de médecine de Paris, etc. 3 série, 1 volume in 8°. Paris: G. Masson. 1891.

Index Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Vol. xii. Reger-Shuttleworth. Washington: Government Printing Office. 1891.

The Status of the Hydrochlorate of Cocaine in Minor Surgery, as based upon the Experience of Philadelphia Physicians. By Lewis H. Adler, Jr., M.D. Detroit: George S. Davis. Reprint. 1891.

The Physiology and Hygiene of Study During the Developmental Period, with Especial Reference to the Public Schools of Sacramento. By Wallace A. Briggs, M.D., Sacramento, Cal. Reprint. 1891.

Diphtheritic Paralysis. Normal Liquid Ergot in Enuresis Nocturna. Report of a Case of a Dissecting Aneurism: Rupture and Death. Cocaine as a Local Anæsthetic in Cases Requiring Amputation of the Digits, with a Report of Fifty such Operations in which the Drug was employed. By Lewis H. Adler, Jr., M.D., Philadelphia. Reprints. 1889, 1890, 1891.

Address.

COMMON SENSE IN MEDICINE.[1]

BY S. C. GORDON, M. D., PORTLAND, ME.

A CELEBRATED bishop, president of one of the most noted universities of this country, said to his class in divinity: "There are three things necessary for making a successful minister of the Gospel: first, a thorough, liberal education; second, the grace of God; third, common sense. The first may be obtained by earnest, diligent application to study; the second by prayerful intercession at the throne of grace, with a sincere desire for purity of heart; but unless you have the third born in you, may the Lord have mercy on your souls and the souls of your congregation."

While common sense is an absolute necessity for any profession or vocation, I know of no one where it is more necessary or important than in the study and practice of medicine. If I were asked to define the terms common sense, it might be difficult; but it will be sufficient for our purpose, at the time, to say that it consists in applying rational, simple rules of construction to the various theories of medical science, adopting and practising what can be measured by such rules, and rejecting those that are at plain variance and antagonism with them.

In the discussion of common sense in its application to medicine, I propose to briefly touch the following topics:

(1) Who should study medicine?

(2) What should be the preparation for the study of medicine?

(3) What are the best methods at the present day for the most profitable pursuit of the study?

(4) What are the essentials for a successful career in the practice of the profession?

The question, who shall or ought to study medicine? is an exceedingly difficult one to answer satisfactorily, in a country like ours, where every young man may legitimately and properly aspire to any position in life, even to be president of the republic. There can, therefore, be no absolute standard for or limit to applicants for medical honors. Our country is not yet old enough or conservative enough for young men to follow the vocations of their fathers to the same extent as in European countries. Hence, each one selects for himself whatever his inclination or judgment prompts. In this way we undoubtedly secure better men, as a rule, in the ranks of the profession. The so-called self-made men are trained in the rugged school of necessity, and, therefore, become familiar with practical facts, which constitute what we so well know as a knowledge of the world. Such men are usually better prepared (with proper education) to deduce from scientific theories the principles which become the foundation for the successful practice of the profession. In short, the common sense acquired in early life aids them very materially in the strictly technical studies.

As regards the second question (what should be the preparatory education for the study of medicine?), we find more or less difference of opinion among the best minds. A recent president of the British Medical Association, in his annual address, says, "Education is just now in a state of fermentation." The old curriculum of our colleges is fast breaking up, being revised and adapted to the practical age in which we live. While it may be desirable that a young man, entering the so-called liberal professions, should have all the training of a so-called liberal education, to be derived from the strictly classical course of the college or university, I believe, with many others, that the time spent in a four-years' course under the old curriculum of most New England colleges, was a great waste of time.

The demands of modern science are such that one must neglect many more important elementary studies or sacrifice a portion of the ancient languages and higher mathematics. It is true that most colleges at present do not require the amount of Latin and Greek and higher mathematics, formerly made obligatory; and elective courses are becoming more general throughout the country. American institutions are more in accord with the practical demands of the age.

The terms used in materia medica, embracing the writing of prescriptions, etc., as well as those in anatomy, require a moderate amount of Latin only; while the nomenclature of diseases is much more readily comprehended, and its study greatly facilitated by an equal knowledge of Greek. Beyond this, I think, the student of medicine should not be required to pass an examination. German and French are far more important to the practitioner, who would be *au courant* with the literature of the profession — in fact, they are indispensable to medical investigation. How many men in the profession who are ten years out of the classics can with ease read any once familiar paragraph from the standard text-book of Latin or Greek? My impression is that only a very small percentage would care to submit themselves to an examination. In too many instances, I fear the original rendering was done by the ever faithful "pony," which did such good service under the desk during recitation; and had the same passage been given him the next day, the absence of the "pony" would have required him to take a "dead." Such knowledge is altogether too costly, and does not even give the mental discipline which we are taught to believe it does. The time could be much more profitably spent in some of the other elementary studies, for which he would have more practical use, and from which he could derive as much "habits of study" and discipline. Physics, chemistry and elementary biology in their application to practical medicine, would not only be far more interesting, but directly in line of future work. Certainly, to one who could decide early in life as to the choice of the profession of medicine, the latter course would, in my opinion, be more in accord with common sense. I am well aware that many other things, aside from the mere curriculum, are to be obtained in the ordinary college course. I am also well aware that faithful, diligent devotion to study during such a course may make a much more polished and accomplished man for any position in life; but daily observation teaches us all that it too often makes only a man educated in books, with but little practical knowledge that he ever uses.

I would not be understood as in any manner decrying or belittling a liberal education, as a preparation to the study of medicine; but I do wish to emphasize the point that an A. B. is by no means an absolute guarantee that its possessor has had the proper preliminary training for the successful prosecution of the study.

[1] Annual oration delivered before the Maine Medical Association, June 10, 1891.

I would encourage the elective course more; and I am glad to know that most colleges are now adopting this plan. In such cases the student can, during his last year, select those things which bear directly upon his future work. I would not so widely separate the classical from the professional course.

It seems to me that the schools of technology are becoming one of the most valuable means of practical instruction for men of all vocations. The scientific school at Yale offers a very valuable curriculum to one who has his choice of a profession clearly defined. If medicine be the one selected, he can enter upon the elementary studies of the profession in such a way as to become practically familiar with them.

Botany, physics, chemistry and biology in general are taught experimentally. The student is compelled to literally "take off his coat," and go to work to learn the fundamental principles, in the only true way they can be learned, by object lessons, — the kindergarten system developed to the capacity of a man's comprehension. At the same time he is acquiring theories by study of the best text-books and such didactic instruction as may aid him in properly understanding the daily routine of his work. But he must learn his botany by actual dissection of plants, as he learns his anatomy by dissection of the animal creation; his chemistry by laboratory work; his physiology by vivisection and other familiar experiments. These become the proper foundation upon which to build the superstructure of a finished education. In short, this preparatory course simply teaches him how to study. As between this and the old college curriculum, embracing so much of ancient languages and higher mathematics, I am fully persuaded that the experimental course is the better.

I am well aware that there are two sides to this matter, and honest and wise men differ as to the comparative merits; yet for the average student, I believe we will turn out from our medical schools better workers in the profession, if they have been trained in the working schools. It may be said, on the one hand, that one's education should be upon the broadest possible basis, embracing a full knowledge of the world and mankind in general, for it is by individual contact and association that success is attained; that the man who has had the broadest, most liberal education is the best fitted for any special work. I grant this, and would not by any means ignore the necessity for a proper classical course as a preliminary to the study of any profession, especially ours. But as life is too short for one to know much of any one thing I am fully convinced that we can improve on the old methods.

In my mind one of the most typical ideal "doctors" that novelists describe is that of Lydgate in George Elliott's "Middlemarch." This class of writers are not usually happy in descriptions of members of our profession; but in this instance the character is well sustained from first to last. He is a common-sense man throughout his varied career, at least, so far as his professional aims, ambitions, and relations with his patients and professional brethren are concerned. The author makes one of the characters say of him, "I do not want a doctor who knows nothing but his profession. He does not interest or benefit me. He is run in too narrow a mould, and not being familiar with matters outside of his profession, cannot bring to bear the best means for the alleviation of human ills."

The every-day experience of each man in the profession must convince him how true this is. "Cans't thou minister to a mind diseased?" is by no means an infrequent question we are called upon to answer; and he answers it best who has made himself master of all the emotions of which the human soul is capable. "To unlock the secrets of the human soul" becomes one of the problems that the wise physician is required to solve. He must stand as minister, lawyer and friend, as well as medical adviser. His knowledge must therefore be as boundless as science and his wisdom as profound as the depths. For such a profession no limit can be placed to even a preparatory education.

What are the best methods for the study of medicine? For many years I have believed the general plan of studying and teaching medicine was radically wrong — contrary to common sense, and in many respects, unlike the study of any other profession or vocation. This radical defect consists in too much theory and too little practical knowledge. Class after class is graduated and commences practice, with little if any familiarity with disease or practical application of remedies for its relief or cure. They study text-books and hear didactic lectures. In too many schools this is largely the extent to which the sense of sight and hearing are used. The early use of the sense of sight, for diagnostic purposes, at the bedside or at dispensaries and the operating amphitheatre, has been discouraged, and students are told that they must not attempt to study disease in the patient or become familiar with the technique of surgery, until they are familiar with the theory by didactic lectures and text-books. To use a paradoxical illustration, "they must not go near the water until they have learned to swim."

Diagnosis, like confidence, is a plant of slow growth, and it is only by long years of clinical study that one becomes an expert. I would have the student of medicine embrace every opportunity to see any case of medical or surgical interest from the earliest days of his student life. It is through the sense of sight that we become familiar with the chief diagnostic points of some of the most obscure diseases. "The color of the face, eyes, skin, lips; the expression, posture, movements, breathing, nutrition, should be taken in at a glance. Practise compels all physicians, if successful, continually to do these things, in order to learn; but training cannot begin too early," says one of our leading journals.

The skilful diagnostician should be able rapidly to enumerate the points in physiognomy and physical structure, just as a painter selects the salient points in a landscape for his picture. The brilliant men in our profession are those who have cultivated the special senses to the highest degree. Such a man unconsciously makes a diagnosis without being able, in many instances, to convey to another his reasons for the faith that is in him.

The same rule applies to all the other senses as to sight. The touch especially becomes a most important element in surgical diagnosis. Long practice enables the surgeon or gynecologist to determine, almost as accurately as by sight, the pathology of a part affected. Certainly no student can begin the education of this sense too early. Mr. Tait, in his work on "Methods in Diagnosis," says: "It is absolutely impossible for me to convey by any kind of description, how I can tell by the touch an inflamed vaginal nervous surface from one that is healthy. Neither can I de-

scribe the feeling that an everted surface of the cervix uteri gives to me, which declares the existence of endometritis; but the educated finger-tip does it."

The numberless instances where it becomes necessary to decide, in relation to pregnancy in the early stages, the difference between a retroverted uterus and a myoma, between a cyst and a hæmatocele, these and a multitude of other conditions require constant practice for years. The sense of hearing needs other training than listening to a poor compilation of a musty text-book. It needs careful and frequent drills in all that pertains to diseases of heart and lungs before one can carefully and distinctly differentiate the various sounds, both normal and abnormal. To be able to analyze and clearly define the pathological symptoms, requires years of practice. At first it is a chaos; but order will eventually come out of it by systematic labor with one's own ears. It cannot begin too early. No amount of theory derived from books or didactic lectures can take the place of the clinical study.

There is no orator so gifted or teacher so skilled as to convey to the most brilliant student the sounds to be heard by the direct application of his own ear to the chest. The sound of a patient's voice also becomes a key-note to many important points in diagnosis.

The sense of smell can be educated to the highest degree, not only to detect unsanitary conditions, but absolute pathological changes. I believe this sense has been too much neglected.

In view, then, of the absolute necessity for personal contact with the patient in order to become expert in diagnosis, I am sure the demands of the day are for a radical change in the methods of teaching and learning medicine. For many years I have believed that the didactic method was doomed to pass away. Most of such instruction has been and is yet, simply a repetition of what can be found in the standard text-books, oftentimes delivered in an uninteresting and uninstructive manner. Few men are interesting teachers; and if the student has had the preparatory education which we claim he should have, he can read the text-book much more understandingly than if he listened to a dry, dull lecture. I admit that now and then we find a teacher who has a higher and nobler conception of what his duty is, as an instructor. His teaching consists in impressing upon his hearers the results of his own personal experience, in the application of general principles to every-day work. Such teaching is fresh from the fountain, and the pupil is refreshed thereby. How frequently I hear young men in the profession say, "I remember literally nothing of the lectures. I got little or nothing out of them. I was obliged to listen to and take notes upon them, simply that I might pass an examination and receive my degree. The only things that made any impression upon me and from which I derived any good was by illustration clinically, or by well-executed drawings or sections upon the living animal or cadaver."

"'T was ever thus from childhood's hour." We learn most through the medium of our special senses, brought to bear upon the subject under consideration. Professor Dwight, of Harvard, said to his pupils in anatomy: "I do not propose to lecture to you from the book; you can read and get that for yourselves, and in a much better way than I can give it to you. I propose to give you what cannot be found in the text-books." Professor Senn, of Chicago, said, in substance: "I do not flatter myself that I can entertain you in quoting from the text-books on surgery. The great writers who are worthy to be quoted from have enunciated the external principles of surgery in a manner far more eloquent than any language of mine; but I can give you the result of my own daily and hourly work, based, I trust, on those principles, but modified by the accumulated experience of years."

It seems to me almost an insult to the intelligence of the properly-educated student to spend an hour repeating stale and obvious facts taken from a text-book which he can read and digest as well as I. The fundamental principles of medicine must to a great extent be learned from standard books, to be sure; and I would not ignore the value of competent teachers as helps to a proper understanding of many things which would be difficult of comprehension without such aids; but I would limit such teachers to hearing recitations, and thus coming in direct contact with the student, who should be compelled to do the chief part of the work. I have hoped for many years to see this reform in medical education, and I am gratified to find a school, based upon this plan, has already been organized in Columbus, Ohio. Recitations, laboratory work, dissections for learning anatomy, and clinical instruction constitute the essentials of this new plan of study. Professor Dryasdust is totally left out of any such institution as this.

The *Medical Record* of a recent date says: "It is reported on good authority that the University Medical College of this city will hereafter abandon, in large measure, the didactic lecture, and teach its students by recitation. Such a change, if made, will be the most important and radical improvement in the system of medical teaching that has been undertaken for many a day. We have long argued in favor of abolishing the didactic lecture, as being an absurd relic of an effete and ancient system of instruction. There has never been any valid defence offered in its favor, except that the recitation method is more laborious, more expensive, and one which perhaps adds less dignity to the professorial chair. Such things, however, are not to be considered in searching for the best method of teaching. It is the student's good which must first be looked after, and it is by the drilling and marking of the recitation that this good is obtained."

Other schools are already in contemplation, based upon similar principles, and the medical teachers of this and other countries are fast waking up to the idea that to learn medicine properly, one must begin at the foundation, and work up by his efforts, using the practical working tools of the profession.

One of the most eminent teachers of the world, Professor Gairdner of Glasgow, in seconding a vote of thanks to the President of the British Medical Association last year, at Birmingham, among other things of equal importance said: "I think medical education ought to be organized upon the principle that it shall be real, as Faraday put it, and not nominal; that every part of it shall be an *education into things and not into words about things*, and that is the great difficulty, [italics mine]. The greatest benefit that could be done by the extension of the science in the early years, would be that the mind of the young man or boy would be opened out in the right direction, that whereas at present his education is to a great extent instruction in words telling about things, it would be instruction in the things themselves. . . . There will education cease to be the lop-sided thing it is, and will be-

come much more broad and general, and not a smattering, but an education in reality."

This is the spirit that prevails at the present day among the most advanced teachers in all departments of science and art, a positive education and not mere words. The old preceptor system, where the student recited his anatomy as he drove about over the country roads and became familiar with the various types of disease that came under his notice, had its advantages in many respects over a mere instruction in words, coming from the most distinguished didactic lecture, with the clinical instruction left out. Men educated under such common-sense methods were better prepared to fulfil the great object of professional life (the cure of disease) than one who could take much higher rank in an examination. It is impossible to pump a man full of medical science, and make a reliable, safe, practical common-sense practitioner. When he attempts to put his theories into practice, they do not seem to fit the case. The actual case is widely different from his theoretical one that he had read about in the text-book, or the one his professor had talked to him about. It is probably within the experience of all of us that for the first few years of our professional life we found more new cases of disease than we did for many, many years after — cases that had not been described, and all were nearly ready to astonish the medical world by some of these brilliant discoveries. Fortunately for our reputation we did not always act upon our first impulse. Time and study of our cases obliterated the discrepancies, and we were wiser and better ever after. Had our medical teaching been more clinical and less didactic, and, therefore, theoretical, we should have made less discoveries.

(To be continued.)

Original Articles.

SOME POINTS REGARDING GENERAL PARALYSIS.[1]

BY C. F. FOLSOM, M.D.

Of the many divisions of general paralysis into several clinical types, all of them naturally more or less arbitrary, I know no other so satisfactory as Meynert's eight.[2]

(1) Simple progressive dementia, with the usual progressive motor impairment which accompanies it.

(2) With delusions of grandeur and with marked motor disturbances, which appear simultaneously and are progressive. The mental state is usually of exaltation, but there may be depression.

(3) Of the same type as the last, but failing its steadily progressive character, that is, with remissions.

(4) Cases in which the characteristic exaltation and grand delusions reach such an astounding height that manifest motor symptoms are looked for with confidence from day to day, and yet may not appear even for a year, any slight incoördination naturally being obscured by the general muscular disturbance. Meanwhile there may be such an improvement as to simulate a recovery.

(5) A very rare form, with alternate symptoms of exaltation and depression.

(6) With early furious delirium, painful hallucinations, confusion and incoherence somewhat resembling acute delirium.

(7) In which the characteristic indications appear secondary to other forms of insanity, for instance, after paranoia or melancholia.

(8) The combined form, with sclerosis in the whole cerebro-spinal tract, the symptoms of tabes or spastic paralysis predominating, according as the posterior or lateral columns of the spinal cord are chiefly involved. The ascending type, in which the cord is first affected, is rare. Optic neuritis, ending in atrophy and paralysis, especially of the ocular muscles, may precede marked mental symptoms.

In Paris, in 1874, and chiefly by Sander in Berlin, in 1876, attention was called to a period in general paralysis in which there are vague signs of mental failure for a varying length of time, perhaps for several years, antedating the pronounced symptoms. This early stage is most marked in Meynert's first class, the demented type, to which the recent great increase in general paralysis belongs.

To the question, What is the pathological basis of general paralysis? the answer is not easy. The disease has been called chronic meningo-encephalitis, chronic diffuse periencephalitis, and, perhaps best of all, chronic diffuse cortical encephalitis, whether primarily interstitial or parenchymatous, ending in greater atrophy than occurs in any other form of insanity. The gross lesions correspond to these various terms and involve others by extension of inflammatory or degenerative or atrophic processes. To the naked eye the appearances may be of the most intense meningo-encephalitis, or in various degrees down to such simple atrophy as may be seen in many wasting diseases. The essential microscopic changes found in the brain, are chiefly in the cortex, and have been well described by Mendel:

(1) Increase of nuclei and new cell-formation, some nuclei small, some large, and with such varying reactions to coloring agents as to suggest dissimilarity of origin. The stellate or "spider" cells are increased in the upper layer of the cortex, where some may be normally found, and extend to lower layers, as is not the case in normal brains; they, too, may be several times the usual size and also push through the white substance to the ependyma of the ventricles; proliferation of neuroglia or connective tissue, and in time sclerosis of the cortex, which involves the medullary substance also, in a greater or less degree.

(2) The larger blood-vessels may or may not be atheromatous. In the capillaries there is an increase of nuclei in the walls, with thickening and hyaloid degeneration.

(3) In the nerve-cells, the ganglion cells, granular and fatty degeneration of protoplasm, sclerosis, atrophy.

(4) Atrophy and final disappearance of the nerve-fibres, not limited to the cortex, and found in other brain diseases also, senile dementia and epilepsy for instance.

(5) Focal lesions of the most various kinds, and degenerative changes in the spinal cord, the several forms of sclerosis and myelitis.[3]

[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, May 20, 1891.

[2] Klinische Vorlesungen über Psychiatrie, Wien, 1890. Braumüller.

[3] Mendel, Berlin Congress, 1890. These points were illustrated by plates which cannot be reproduced.

The post-syphilitic cases, with a previous history of syphilis not recent, those not only not benefited by iodides and mercury, but usually debilitated and injured by them, may exhibit post-mortem the same microscopic changes as those in which there is no ascertained evidence of syphilis. In paralytic dementia, with a recent history of syphilis also, and with marked indications of specific disease, where anti-syphilitic remedies avail to produce such an amelioration of symptoms as to simulate a cure at least for a time, the same diffuse cortical changes may be found at the autopsy-points, which, in making and in verifying diagnoses should be borne in mind, as well as the facts that there are degenerative changes in the brain secondary to gross syphilitic lesions, which do not constitute general paralysis, and that the several types of general paralysis and other conditions of cerebral atrophy exhibit post-mortem appearances which may so gradually shade off into each other as to make the analogy very close.

In senile and chronic simple insanity, the atrophy of the nerve-fibres is primary. In paralytic dementia, the essential process, according to Obersteiner, is a diffuse primary sclerosis of the cortex, which leads to atrophy. It appears in the frontal lobes first. The sclerosis is preceded by a condition of irritation which seems to justify the expression, chronic periencephalitis, but the brain coverings play only a secondary part. In very acute cases, in which we are enabled to recognize an early stage in the diseased processes, we are struck with the quantity of lymphoid bodies which surround the blood-vessels throughout the whole brain. These leucocytes probably migrate out of the blood and pass through the neuroglia or ground tissue of the cortex as wandering cells before being changed into stellate or "spider" cells. Perhaps also the stellate cells, normally present in the cortex, provide further material for proliferation. It is in the overgrowth of these cells belonging to the connective tissue that we have to look for the cause of the sclerosis. So soon as these cells occupy so much space as to surround and press upon the normal nerve-tissue cells, the latter atrophy. The result of this process is seen in old-standing cases, not only in the degenerated nerve-cells, but also in the remarkable diminution in the quantity of medullated fibres. This disappearance of medullated fibres advances from the periphery inwards; so that, as a rule, the outermost layer of tangential fibres is most affected, whereas in senile atrophy the decrease in the number of fibres affects all the layers equally. The convolutions most constantly and distinctly affected are those on the orbital surface of the frontal lobe, especially on the side of the great longitudinal fissure; next, those of the island of Reil and the left inferior frontal convolution. The other frontal convolutions, the gyrus fornicatus, the paracentral, superior temporal and ascending parietal convolutions are often diseased to a similar extent. All other parts of the cortex are, it is supposed, affected in a less degree only, or, in the case of the occipital lobe, it may be scarcely at all. A decrease in the number of fibres may be met with in other conditions besides paralytic dementia, in senile atrophy and long-standing epilepsy, for example. The changes in the structure of the cerebral cortex to be seen in paralytic dementia assume many forms, however, hence the description of pathologists differ widely one from another.[4]

[4] Obersteiner (Hill's translation) and Tuczek.

Can it be that, as there are so many clinical forms of general paralysis, there may be also more than one from a pathological point of view?

While it cannot be said that any particular morbid changes in the brain are singly characteristic of general paralysis, inasmuch as they appear in other degenerative cerebral diseases, yet the whole group involving chiefly its anterior and antero-lateral portions, the psychic and psycho-motor tract, and resulting in such marked final atrophy, is found in no other condition. Indeed, the trained pathologist has been able to diagnosticate as general paralysis, after death by suicide, what had been supposed during life to be melancholia, distinct motor symptoms not having been observed. The fact is interesting, too, that healthy and diseased cells and nerve-fibres are seen side by side, so that the early symptoms do not constitute a paralysis but a cortical ataxia, a motor intelligence-disturbance as Obersteiner well says, on the one hand and on the psychic side mental failure due to defective association of ideas through greater or less affection of the association-fibres in the cortex. Farther than that we can scarcely yet be said to know much about the relations of pathological conditions to abnormal mental manifestations in general paralysis, except so far as the final atrophy explains the intellectual and physical decay.

After this somewhat long definition of what is meant by the term general paralysis, I will not detain you with a discussion of the difficulties in the diagnosis of the disease in its obscure though pronounced forms, including the exclusion of cerebral tumors of the anterior lobes; cerebral diffuse sclerosis; intracranial hæmorrhage, embolism or thrombosis; phlebitis of the venous sinuses; cerebral syphilis; premature senile decay and primary atrophy of the brain, which may both be attended with epileptiform or apoplectiform convulsions; acute mania with extravagant delusions; primary dementia; alcoholic dementia or mania; chronic alcoholism; the slow atrophy and degeneration of the brain in one form of primary insanity; symptoms of brain failure in chronic nephritis or from impaired circulation in heart disease; lead-poisoning; bromidism. All these conditions may simulate general paralysis, and may make the diagnosis difficult, or, for a while, impossible. The grouping of the symptoms, no one of which may, at the time, be typical, and the symmetrical character of the mental and physical deterioration, are the determining points in an obscure case.

In the study of the early stage of general paralysis it is convenient to divide it into first a prodromal, and second, a later or initial period. The symptoms of the prodromal stage, so to speak, are vague and indeterminate, very much resembling those of cerebral asthenia from any cause, but usually without the so-called neurotic element. Now and then, but rarely, associated with it, we see quickened wits, blunted sense and moral sense, with slight exhilaration. This stage is thought by Meynert to depend upon cerebral vascular disturbances which are functional and curable, and to precede the slight organic changes which characterize the next or initial stage. I think that as a rule, the subjective symptoms are so much less in general paralysis than in cerebral neurasthenia that medical treatment is not thought by the family to be important and the patient regards himself perhaps as only tired, so that it is for the functional cases, for the most part, that the physi-

cian is consulted, or for such symptoms as depend upon definite ascertainable conditions of disease. In functional disorders the cerebral vaso-motor disturbances are more constant and pronounced; they are conspicuously observed and dwelt upon by the patient himself, while the prodromal indications of general paralysis seem trivial or are unobserved by him and attract the attention, if of any one, of his close associates. It is chiefly by exclusion, if at all, that the prodromal period of general paralysis can be detected or at least suspected. After the diagnosis has been narrowed to a question between general paralysis and cerebral exhaustion, a previous history of syphilis and the age of the patient are most important factors. If under the age of thirty, general paralysis, except as the result of comparatively recent syphilis, can, as a rule, be excluded. If over fifty-five, some other condition than general paralysis is more probable, provided there has been no syphilis, and Mendel's estimate seems to me correct, that it is an antecedent in at least seventy-five per cent. of all cases.

I have usually found when I had opportunities to investigate, that in the history of general paralysis the prodromal period, although not at the time considered important as such, is remembered as having existed. But, of the very large number of cases which I have seen in the last ten years presenting symptoms of cerebral asthenia or general neurasthenia, I have not found, even in the many who neglected treatment, a single case of general paralysis follow; and in the three or four cases where I ventured to provisionally make that diagnosis, either I was mistaken or a recovery followed with but very little treatment but rest. Of numerous cases with the symptoms of cerebral hyperæmia which are so common in brain-tire from over-strain, I have not seen one develop into general paralysis, nor have I known a case of general paralysis with such antecedents. In the prodromal period the best that we can do, until our means of diagnosis vastly improve, is to indicate a certain danger signal by which to warn our patients.

When to vaso-motor indications, whether slight or not, symmetrical motor symptoms are added, the initial stage begins, and its appearance is most insidious. There is a little general muscular weakness, with some failure in concentration and adjusting skill. The occasional lapses from a former standard of living, of self-respect, and perhaps decency or honor, if they occur, are regarded as ethical rather than as requiring medical advice. The inexplicable change in personality, in character and conduct, is simply not explained. The diminished physical power or endurance, is thought fatigue. The muscular incoördination and embarassment of speech are so slight as to rarely admit of easy detection. The initial signs of general paralysis are of brain failure. They may be recognized in a large proportion of cases, at least in those persons whose muscles and brains are highly organized. In professional and business men a less degree of impairment is recognizable than in mechanics; in routine employments a large degree of deterioration may be unnoticed. In day-laborers an early diagnosis is simply impossible.

The initial indications are recognized perhaps as much from the peculiar quality of the mental impairment, difficult to describe, as from its degree. The physical symptoms may be so slight as not to be appreciated for a long time, except as an unusual sense of weariness on exertion, which may also show itself after long talking or reading in a slight failure in putting words and ideas and sentences together. Commonly there is loss of flesh, slight, moderate or excessive. Very great or disproportionate loss of muscular power, especially in the legs, I have found to be due to a complicating peripheral neuritis. Even the expression of the face and the general appearance of the patient are often characteristic. There may or may not be slight confusion, a sense of fulness in the head, headache, insomnia. Except for unusual physical as well as mental fatigue following effort, the patient may feel well and not complain of anything. There may be no indication from the eyes or the reflexes so early; the muscular tremor is, as a rule, less than in functional nervous disorders; the speech may be not noticeably affected to the family, and may be only like that of a person with lips chilled by the frost or slightly under the influence of wine. It may be necessary to have the patient read or copy several pages, or be under observation for several days before the defect in the use of the muscles is manifested. His impaired ability to adjust himself to his environment may be detected only by testing him in a new place or by occupying him in unaccustomed ways. The distinguishing feature of this stage of general paralysis is the fact that the change observed consists in a symmetrical deterioration, which is distinctly motor as well as psychic, and, as in all diseases in which a vaso-motor element is prominent, varies from time to time, and may disappear, at least temporarily, by complete rest, just as excitement, fatigue, alcohol and vaso-motor stimulants bring out the symptoms more markedly. The clinical history of the initial period is so lacking in sharp definition and clear description, in contrast to the striking picture of typical general paralysis in its advanced stage, that it is all the more easily mistaken for something else.

In a doubtful case, a previous history of syphilis, naturally, very much increases the probability of general paralysis; and I am satisfied that no one of the methods of treatment for the primary chancre, or its constitutional symptoms, even if in the hands of the most skilled specialist, secures immunity against cerebral syphilis or general paralysis later. In no case of syphilis, as I read the evidence, however treated, are we justified in saying to the patient that he is cured so far as a small chance of possible late manifestations in the brain and nervous system are concerned, at least not until after a long term of years. The chance may be small, but it is there. How far specific treatment in syphilis may diminish the chances of subsequent paralytic dementia, or modifies our prognosis in its prodromal and initial stages, is a question which there are now no better means of determining than the character of the relation of the one disease to the other.

While we may not accept Zeissl's dogma that once a syphilitic is always a syphilitic, that his corpse is a syphilitic corpse, and that if he revisits the earth he comes as a syphilitic ghost, or believe with another pessimist that one of the chances which every woman who marries must take in all social grades is that of her husband some time having some late manifestation of syphilis, it seems to me that the medical profession is not sufficiently cautious and conservative in its warning and advice regarding the dangers which are incurred in syphilis. If the risk is small, comparatively speaking, when the syphilis is wisely treated,

it still is greater than many men would take, in considering marriage for instance, if they were correctly informed. One man contents himself with one chance in two hundred; another with one in ten; and there are some matters in which others will not knowingly run any risk at all. We may formulate our opinions as to probabilities in syphilis as we like. We often cannot, when we would, prevent our patients from doing as they are inclined. We can, however, leave the responsibility for the tragedies of late syphilis where it belongs and thereby perhaps diminish the prevalence of syphilis more than by laws.

SARCOMA OF THE NOSE; WITH REPORT OF A CASE.[1]

BY J. PAYSON CLARK, M. D.

G. W., colored, thirty-five years of age, came to the dispensary in July, 1890, complaining of obstructions of the nose, especially of the left side. He had never had any trouble with his nose until three months before, when he began to have difficulty in breathing through the left nostril. This difficulty had increased until the left nostril was almost entirely occluded and the right was beginning to be obstructed.

On posterior rhinoscopy the left nostril was seen to be completely filled by a bluish-gray mass extending into the naso-pharynx and beyond the septum towards the right side of the pharynx. The origin of the growth was not perfectly clear, but it was apparently the middle turbinated bone. Anteriorly, in the left nostril, the growth could be seen far back, apparently arising from the middle turbinated.

I at first removed, with the cold wire snare, through the right nostril, the small piece which could be seen extending beyond the septum. In attempting to keep this piece in a fresh state for microscopic examination, it became so soft that it could not be satisfactorily examined.

I then attempted, under local anæsthesia (ten per cent solution of cocaine), to snare the growth. This was a somewhat difficult procedure, owing to the prominence of the lower turbinated body, and a projection from the septum above, which hindered the placing of the loop. Besides this, the tumor would bleed quite profusely at the slightest touch, so that after one unsuccessful attempt, nothing more could usually be done at that sitting. About two weeks later, after repeated unsuccessful attempts to get the loop in position, I finally managed to engage the growth in the snare and remove the larger part of it. The instrument used was Dr. Hooper's combined snare and ecraseur, the snare being turned slowly for fear of hæmorrhage. The growth was so soft, however, that the loop cut through sooner than I expected. The bleeding, which was moderate, stopped very soon. The remainder of the growth shrank considerably, so that quite a clear view could be had of the posterior nares. This view disclosed the fact that there was also a small growth, of similar appearance, from the septum, near the posterior border. This growth was removed, together with the remains of the larger growth on the middle turbinated, in two more sittings, and the nostril was left perfectly clear.

Dr. E. M. Greene kindly made a microscopic examination of the growth, and sent me the following report.

"Boston, August 11, 1890. The piece of tissue removed by Dr. Clark measured three centimetres in length, and one-half centimetre by one centimetre in thickness. [The tumor had been for some time in fifty per cent. alcohol, and had consequently shrunk somewhat.] The tissue was soft and friable. Microscopically it was made of medium and large-sized cells densely crowded together, with very little intercellular substance, giving the appearance of round-celled sarcoma."

My notes say;

September 29th (one month after last operation). No signs of return. The mucous membrane apparently everywhere normal. Nothing to show where either tumor was attached.

October 30th. Small rounded swelling (size of a pea) on left side of septum, near posterior edge. Mucous membrane over it, same in color as surrounding membrane. Nothing abnormal about the turbinated bodies.

November 17th. Growth on septum now the size of a large bean. Removed with wire snare. Very little hæmorrhage.

November 28th. Piece the size of a pea (apparently a remnant of the last operation) removed.

December 17th. Slight irregularities on septum at the site of former growth.

February 5th. Still some thickening at site of growth (septum). No apparent increase since last observation.

March 17th. Small remnant of growth (size of pea) removed from the septum. The site was the same as that of the previous growth.

May 2d. Since the patient was last seen, another recurrence has appeared on the septum. This is about the size of a large bean. Removed with cold wire snare.

Dr. Greene has kindly examined the re-current growth removed from the septum on November 17th, and reports: "The specimen consisted of a soft, round piece of tissue somewhat smaller than the tip of the little finger. Microscopically, this tissue consisted mainly of large round cells, close together, and a few thin bands of fibrous tissue running through the growth. There were a few large blood-vessels, and occasionally a large gland lined with cylindrical epithelium. The appearance was that of a large round-celled sarcoma."

It would appear from my notes that the growth of the tumor was considerably more rapid in the six weeks preceding the second of May than previously. Whether this means that the growth has taken on greater malignancy or not, time will show. Of course the patient will have to be kept under observation, and further recurrence promptly treated.

Sarcoma of the nasal passage seems to be a comparatively rare affection. In his first volume of "A Treatise on Diseases of the Nose and Throat" (1889), Bosworth gives a brief *résumé* of forty-two cases, all that he could find reported up to that time. (This list does not include sarcoma of the naso-pharynx which is treated of in another chapter.) I have been able to find, besides these, the reports of six cases published since Bosworth made his list.

Heymann reports the case of a man, aged fifty-eight, subject to rapidly-recurring polypi, which finally be-

[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, May 20, 1891.

came complicated by a dense, sessile, grayish-black tumor of the septum, the size of a nut, attached by a large base. This growth, upon removal (by the galvano-cautery), proved to be a melanotic sarcoma. No recurrence one year after the operation.

Pascale reports the following case: Male, aged thirty-six, in whose left nostril, three months before, appeared an excrescence the size of a small bean (location not given), which in the course of a month increased so rapidly as to fill the whole nostril. It was removed, but quickly recurred, filling the nostril, and at the same time causing difficulty and pain in mastication. The growth finally involved the hard palate, causing a rounded, soft projection into the mouth, also conspicuous left-sided exophthalmia. The nose had lost its shape, and was bent to the right, so that the right nostril was occluded. Some of the growth projected out from the left nostril. The patient had had one hæmorrhage, in which the blood came both from nose and mouth. The patient was operated on, and the left side of the upper jaw removed. The wound healed well, and there was no recurrence at the time of writing. The date of the operation was not given; but I judge that it was only a short time previous to the report.

Dr. Hooper reports two cases. The first, a man sixty-two years old, came to him complaining of occasional hæmorrhage and obstructed breathing. The breathing through the left nostril had become gradually impeded, and for the previous six weeks no air had come through it. The growth was a smooth, reddish tumor, completely occluding the left nostril. The origin was the anterior inferior cartilagenous portion of the septum. The patient lived at a distance, and had not been heard from since the operation. The second case was also a man, aged sixty-five. The symptoms similar, though not so marked, as in the first case. The growth was situated in the anterior superior region of the cartilagenous portion of the septum. Four months after the operation there had been no hæmorrhage and no sign of recurrence of the growth. In both cases pedicles were very small. Microscopic examination of the first growth showed it to be a fibro-sarcoma. The second was a myxo-sarcoma teleangiectoides. The operation in each case was done with the cold wire ecraseur.

There are only three cases of melano-sarcoma of the nose mentioned in literature. Lincoln's (reported by Bosworth), Heymann's (reported above) and Michael's. This case was a woman, aged fifty. The growth was from the middle and inferior turbinated bones. The base was curetted, and cauterized with the galvano-cautery, after several pieces had been removed with forceps. There was no recurrence eighteen months later.

C. H. Knight's case was one of extensive and rapidly recurring fibro-sarcoma of the right nasal fossa. The patient was a man forty-two years of age. There was the history of a blow on the nose twelve years before. For two years before first seen he had suffered from more or less nasal obstruction and catarrhal discharge. No hæmorrhage until two months previous. He had considerable tenderness and swelling in right infraorbital region. A soft, vascular and very sensitive mass filled the right naris. A large piece was finally removed with the cold snare from the anterior portion of the tumor, accompanied by profuse hæmorrhage and great pain. This piece was reproduced with great rapidity. Cassaignac's operation was then performed, and a mass of the growth removed with curette and wire loop, when it was found that the growth invaded the ethmoidal and sphenoidal cells, and could not be safely followed. The growth recurred rapidly, extended into the orbit, and, from the mental symptoms, probably into the brain, ending in death. No autopsy was permitted.

Etiology. — The information to be gathered from these cases and from those reported by Bosworth, as to the etiology, is very slight. In one of Bosworth's own cases, "the sarcoma seemed to develop after polypi had been operated on rather harshly, by means of forceps, while in Schäfer's case the same conversion had taken place, apparently spontaneously." In Heymann's case, also, rapidly recurring polypi finally became complicated by sarcoma. Taking into consideration, however, the frequency of nasal polypi (about one case for every eleven of ordinary catarrhal trouble, according to Bosworth) and the very small proportion of these cases of sarcoma in which the history of the pre-existence of polypi occurs, it seems to me rather far-fetched to attribute to them any causative relation. To be sure, frequent and rough operating on nasal polypi might tend to incite a new growth, as constant irritation is certainly a well-recognized factor in the causation of malignant growths in other parts of the body.

As Dr. Knight says, in the report of his case, the question of traumatism as a cause of malignant growth is an interesting one and, in a medico-legal light, might become an important one. While none of us, probably, believe that traumatism alone is capable of producing malignancy yet we might consider it capable of starting into activity a malignant focus. However, until we understand better the nature of malignant growths, whether starting from foci of embryonic cells or in some other way, our opinions in this respect can be hardly more than surmises. Watson says that recurring nasal fibromata show a tendency to assume a sarcomatous type. Bosworth also speaks of sarcomatous degeneration of fibromata as of not infrequent occurrence.

Out of 38 of the cases that Bosworth reports, 22 are males and 16 females. Of the six cases reported above, five are males and one female, making a total of 27 males and 17 females. As the greater exposure of men to irritating atmospheric conditions makes them more subject to catarrhal diseases, it would seem natural that the same conditions might increase their liability to malignant growths in the nose and nasopharynx, or, in other words, that catarrhal inflammation of the nose may possibly (as Bosworth suggests) predispose to sarcoma.

Of the cases in which the age is reported there were in the decades from

Age.	Cases.	Age.	Cases.
10-20	7	50-60	5
20-30	5	60-70	6
30-40	7	70-80	1
40-50	15		

Of those cases occurring between forty and fifty, 11 were under forty-five. It thus appears that almost two-thirds of the cases occurred in patients under forty-five years of age. In this respect sarcoma differs from carcinoma of the nasal passages, the majority of the cases of the latter disease reported being above fifty years of age. The average duration of the cases re-

ported by Bosworth was three and two-thirds years, "which would seem to show that sarcoma runs a somewhat slow course when it develops in the nose."

Pathology.— I will not discuss the structure of sarcoma of the nose, since it does not differ essentially from sarcoma in other parts of the body, "except in so far as it is modified by the special tissue from which it develops." Bosworth says, "It should be easily recognized by microscopical examination, and yet it must be borne in mind that the normal membrane of the nose is exceedingly rich in lymphoid tissue, which oftentimes bears a somewhat confusing resemblance to the structure of round-celled sarcoma."

Symptomatology. — A review of the cases reported shows, as would doubtless be expected, that the prominent, almost constant, symptom of the presence of a sarcomatous growth, as indeed of every nasal tumor, is obstruction to nasal respiration. This symptom varies with the size and position of the growth. Epistaxis is another very common symptom, which may sometimes be observed before obstruction. It is quite characteristic of sarcoma, and should make one suspect the growth to be of that nature, although hæmorrhage is also common with fibroma. This hæmorrhage may be due to erosion of the mucous membrane of the nose, but is probably as often due, in sarcoma, to bleeding from the tissue of the tumor itself, which is usually very friable. There is sometimes a muco-purulent discharge from the nostril affected. The growth, if of sufficient size, may cause considerable deformity.

Diagnosis.— The gross appearance of these growths is somewhat characteristic. The surface has usually a bluish-gray color. The consistency is usually soft and flaccid. If, with these characteristics, the growth bleeds readily and hæmorrhages are repeated, the diagnosis of sarcoma is a very probable one. The color varies somewhat, according to the variety of sarcoma. In Dr. Hooper's first case the tumor is described as "a smooth, reddish" growth. In one of Bosworth's cases the growth was of a "reddish-yellow" color. Sarcoma apparently arises with about equal frequency from the septum and the turbinated bones. In the cases in which the origin of the growth is mentioned, it was the septum in eleven, the turbinated bones (one or more) in ten, in two both the septum and a turbinated and in one the floor of the nose. For a confirmation of the character of the growth a microscopic examination is, of course, always necessary.

Prognosis. — From the cases reported it is impossible to gain any trustworthy idea of the prognosis. In many cases the history subsequent to the operation is not given, while in many others it covers so short a period to be practically useless. In one case there was no recurrence at the end of seven years, and in two others none at the end of one year. The first of these cases we can fairly consider a cure, and probably the two others. A few months' freedom from recurrence, on the other hand, can hardly be considered satisfactory evidence of a cure. A case of sarcoma of the naso-pharynx, reported by W. H. Bennett, shows what long periods of immunity from recurrence one may see in this form of malignant growth. The first removal was in 1866, a large recurrent mass was found and removed in 1874, and another in 1890. Epistaxis was the only symptom which drew attention to the presence of the growth. During these long periods the tumor changed in character. The first consisted of fibrous tissue and spindle cells. In 1874 the cellular elements had increased. In 1890 the growth had become a typical mixed spindle-cell and myeloid sarcoma.

The above case simply enforces the injunction to see a patient from time to time for a long period after the removal of a nasal sarcoma. "Aside from these considerations, our prognosis must be based on the extent of the disease, its duration, and especially on its apparent rapidity of growth. The character of the growth has an important bearing on the prognosis, in that a round-celled sarcoma is to be regarded as more malignant in its tendencies than the other varieties. . . . In those cases where we find the sarcomatous elements intermingled with the normal-tissue elements, as in fibro-sarcoma, myxo-sarcoma, adeno-sarcoma, etc., the prognosis is rendered less grave as the proportion of the normal elements increases in the tumor."

Treatment.— The only form of treatment applicable to a sarcomatous growth in the nose is an operative one, that is, a thorough removal of the growth by some instrumental means. The question then comes, Shall a removal be attempted, where apparently practicable, through the natural passages; or, no matter what the size of the tumor, if it be malignant, shall one of the numerous resections be performed which enable the surgeon to reach directly the seat of the growth? This is a point in which there seems to be some difference of opinion.

Ollier favors immediate resort to his operation for resection of the nasal bones, getting directly at the growth and eradicating it at once and completely. He condemns removing small portions of a malignant growth in as many sittings, believing that such a procedure exposes a patient to a much greater likelihood of recurrence. He also holds that operation through the natural passages can be, at best, only imperfectly performed, through inability to properly see and reach the parts. I can only say, in answer to this opinion, that there are certainly many cases of nasal growth where one familiar with microscopy feels competent not only "to properly see and reach the parts" but also, with the proper instruments, to remove the growth, through the natural passages.

A. F. Plicque also believes that growths of a malignant nature should always be removed by an external incision. C. H. Knight agrees with this opinion, thinking that valuable time may be lost by delay in doing this.

S. A. Fox, at the close of a report of a naso-pharyngeal carcinoma, recommends the "thorough removal from time to time with the post-nasal-curetting forceps and wire snare." He objects to the various capital operations, as being dangerous and causing more or less mutilation.

The strongest support to the practice of removing the growth piecemeal and through the natural passages is given by a case of extensive naso-pharyngeal sarcoma removed in this way by Bosworth, the operations extending over a period of more than four months. At the end of seven years there is not the slightest sign of recurrence. Bosworth says: "Ordinarily the growth should be removed through the natural passages, when it is feasible; although, if better access to the nasal cavities is demanded, an operation on the external nose does not necessarily complicate the result. The growth may be extirpated by the curette, spoon, cold snare or galvano-cautery loop."

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BY J. A. JEF

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[1] Read before the Boston So
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ment, although it can undoubtedly be advantageously supplemented at times by the sharp spoon or curette. Bosworth considers cauterization of the base of the tumor oftentimes harmful, stimulating the growth to renewed activity. This was apparently true in the case just cited, for it was not until the galvano-cautery was abandoned that he made headway against the growth. For the same reason the galvano-cautery loop is not usually advisable.

"The most serious obstacle met with in these operations, is always the excessive hæmorrhage. This is probably true in all varieties of sarcoma, and especially so of the angiomatous growths. The source of the hæmorrhage is always from the tumor itself, and the indications are to get the growth out as rapidly as possible, and to get down to its attachments. When this part is reached, the hæmorrhage, as a rule, ceases at once."

As I have already said, after the primary operation, the patient must be seen at specified intervals for at least two years, to watch for any tendency to recurrence.

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HOW IS TUBERCULOSIS ACQUIRED?[1]

BY J. A. JEFFRIES, M.D., BOSTON.

(Concluded from No. 9, page 217.)

To review the evidence as regards food, we see that tubercle bacilli are rare in flesh as sold in the markets, and that neither experiments nor observation have shown that flesh is more than a remote danger to man. Milk is an undoubted source of infection; but the results of experiments and observation on man and cattle indicate that it is not a great one.

I have ignored Brushe's argument, that human tuberculosis is due to cattle, since it only occurs where cattle are kept, for two reasons: first, doubt as to the facts; and, second, the fact that the cattle may be exempt though the people are afflicted.

Infection from dust and dirt alone remains to be considered. That tubercle bacilli are cast into our surroundings in vast numbers is self-evident. The number thrown out per annum in the sputa of the phthisical far exceeds the comprehension of man. A larger number are spit out in the sputa, and go into spittoons, on handkerchiefs, clothing, furniture, carpets and the ground. A smaller number are coughed out, often in very small particles of phlegm, and are scattered over everything in the vicinity, provided a handkerchief is not applied to the mouth, as is sometimes done, — I say sometimes, for most do not practise this so-called refinement, — in reality a hygienic measure. The readiest way to satisfy one's self of size and amount is to hold some object before the face of the cougher. I have several times, during the last few years, observed people cough before a window. The result is instructive. The same is true of sneezing, except that the particles are finely divided and almost form a spray. The result is to distribute the tubercle bacillus all about the sufferer. The same is true to a greater or lesser degree of every tuberculous lesion discharging on the surface. The bacilli escaping in human dejection go, in the great majority of cases, to places where they can do no harm. The same thing goes on with all tuberculous animals, except that the horned animals do not spit out what they cough up. Some have jumped from this to the conclusion that they do not cough out anything; this is not correct.

The dust has been chiefly studied by Cornet,[42] and his article is so well known that it is only necessary to state that, out of 311 trials with the dust and dirt from spaces occupied by phthisical patients 59 gave positive results. All of 77 trials made with other spaces were negative. Several other experimenters have made similar trials with similar results.

Rembold[43] and others have sought for and found tubercle bacilli in the air. Three methods have been used: a cover-glass with a miscous coat placed in a draught, and subsequent microscopic examination; drawing air through a cotton plug, and then putting the plug in a guinea-pig; and exposing plates with a thin layer of glycerine to the air, and then washing and using the wash-water. There is, however, a dearth of this sort of work; extended and varied research in this line is a desideratum which no private individual is liable to fill.

Spillman[44] and Hofman[45] have found that flies carry the germ in their intestines and deposit it in their droppings, and Hofman in one case out of four found the bacilli in flies' guts virulent when inoculated into the eyes of rabbits.

As might be expected tubercle bacilli have been found on the bodies of consumptives and their toilet articles.

We, therefore, know, without going any farther, that tubercle bacilli are liable to be all about us. And only two things interest us; first, How many are alive, that is, capable of infecting? and how can they get into us and our animals? A dead bacillus, or one fastened down, is of no import. When first escaping from the body many, probably most, are alive; this is proved by the extreme susceptibility of our inoculation test. The first questions is, therefore, How long can they live? And to this we can safely answer, months at least. Drying, putrefaction, sunlight, are all detrimental to the plant and tend to destroy it; but none of these are prompt or sure.

Stone[46] has shown that the tubercle bacillus may be virulent in sputa after three years, during at least two of which it had been in a state of absolute dryness. Cadeac and Malet[47] found that the lungs of tuberculous cattle dried, powdered, and then exposed to the air of a room, were virulent at the end of 102 days. A piece the size of the fist, dried and exposed to the air, infected at the end of 150 days; a similar piece, buried in a three-litre flask filled with sand, was viru-

[1] Read before the Boston Society for Medical Observation, June 1, 1891.

[42] Zietschrift f. Hygiene, Bd. v, 1888.
[43] Centralbt. f. Bact. u. Parasit., vol. vii, p. 199.
[44] Compt. Rendu., cv., 87, p. 352.
[45] Centralbt. f. Bact. u. Parasit., vol. iv, p. 269.
[46] Am. Journal Med. Sciences, Mch., 1891.
[47] Congrés pour l'Etude de la Tuberculose, Vol. i, p. 76, 1889.

lent at 159 days; also pieces in a flask of water exposed to sunlight for 120 days, and others in running water for one month, were virulent. Heim and Galtier have shown that the plant will live from one to four weeks in milk and its derivatives. It also lasts well in water (Cantamese and Vidal). It is therefore clear that, in spite of certain experiments pointing to the rapid death of the germ in the presence of putrefaction, it is quite liable to last for a long time. It must be borne in mind that all putrefaction processes are not alike.

There is therefore no doubt about the extensive distribution of the live bacillus in our dwellings; as yet it has not been found out of doors, but it must be there.

From the general dust to the interior of our bodies is but an easy transition. Every tramp of the foot, quick motion of the arm, is liable to raise a host of bacteria. The broom and feather-duster are finely adapted for raising them up; once up they may be breathed in. Tubercle bacilli are not different from others except in their rather enduring life, and we know that the air contains many germs. Besides the air the plant can gain entrance by direct contact while lying still. We touch everything, and much remains on our hands. We all know that it does not do to scatter red pepper in our rooms; it is soon in our eyes and nose. Babies are particularly bad in this respect; everything grasped goes into the mouth; and given a coming or going tooth, the opportunities for inoculation are excellent. Has this any connection with the prevalence of scrofulous glands in the neck during youth?

What we have now to consider is the evidence that such a theoretically potent factor is such in fact. Naturally we have not the number of striking observations afforded by direct infection; we cannot trace the invisible bacillus with the directness that we can infected food, and can never, so far as mechanics are concerned, be sure into which organs the plant entered. Of this the case of Toulmin already given is an illustration; where the bacilli went to, the laws of physics do not show. Those in the air probably settled along the respiratory tract, those conveyed by contact probably into the mouth, and thence either out again or into the stomach.

Besides the above I know of but one case, that of Kruche. A boy of healthy family, strong and well, occupied for a few weeks the room and bed previously used by a phthisicial patient with profuse expectoration, and shortly died of miliary tuberculosis. Cattle show the same thing, it being not unusual for tuberculosis to begin with a new cow at one end of a row of cattle and travel along, stall by stall.

Cornet's [48] reports on the prevalence of tuberculosis among the religious orders which care for sick indicate indirect infection on a large scale. He found that for twenty-five years the average membership had been 4028.8, total deaths 2099: of these 1,320 (62.88%) from tuberculosis, and 13.94% from other parasitic diseases. These figures are not isolated; the same thing crops out in hospital records, prisons, reformatories and even barracks, in spite of the extensive out-door exercise of the troops.

Records such as that of Sendter [49] and Kempf [50] are of significance. The former notes that on the Island of Frauen Chiensee, with a population of about three hundred souls, the deaths from tuberculosis since 1800 never exceeded seven in the decade until the last; while the cloister, with from twenty to forty members, was immune until 1860. During the sixties two died of tuberculosis; the same in the seventies; while during the last decade eleven fell victims. The latter records a convent in which a case of tuberculosis occurred in a girl of eighteen, and was followed in four months by nine more; after which the sufferers were partly put in separate rooms and isolated, partly transferred to other asylums; and the rooms cleaned, after which no more cases occurred.

The difference in the amount of tuberculosis between the single, married, and widows and widowers, is of interest in this connection. Destree and Gallemært's [51] table for Brussels, calculated to the ten thousand for each age, sex and state, is given below:

Age.	Single.		Married.		Widowers and Widows.	
	Male.	Female.	Male.	Female.	Male.	Female.
20-25.....	87.0	67.0	121.4	97.0	187.5	163.3
25-30.....	101.3	65.2	85.0	102.5	241.4	190.5
30-35.....	123.9	64.2	84.5	77.2	158.7	168.3
35-40.....	99.0	66.8	94.4	73.5	195.8	104.3
40-45.....	110.7	49.3	86.8	70.8	176.1	83.9
45-50.....	74.8	53.4	105.0	59.8	210.0	81.3
50-55.....	67.4	44.0	94.8	45.6	137.7	55.2
55-60.....	69.1	34.0	81.2	40.3	139.3	53.0
60-65.....	39.7	30.4	87.4	40.8	90.9	43.4
65-70.....	31.8	18.8	60.4	29.3	54.7	37.8
70-75.....	29.7	24.1	45.9	23.1	59.2	32.9

This table shows a greater death-rate among the married than single, and also that there is a very high death-rate from tuberculosis among the widows and widowers. The suggestion is very strong that the latter class catch the disease from their mates, and later follow them to the grave. The increase among the married is difficult to explain, since it is chiefly confined to the men. Infection from the mild and recovering cases will explain the rise in part, but apparently in part only. The bad result among widows and widowers cannot be explained by reference to the vicissitudes of this state, since it shows in both sexes, while widows alone are specially exposed to want; and this is fully counterbalanced by the want among that numerous class, the prostitutes.

Ransome's [52] and Flick's [53] figures, showing that deaths from tuberculosis tend to occur in certain houses, strongly suggest indirect infection. The same is true of the marked tendency of the disease to annihilate certain families.

As negative evidence in the same line, we have many illustrations of how care and cleanliness will cut down a high death-rate from tuberculosis, as in modern reformed prisons, or even avoid the disease. Thus, Stick, [54] in Neuronberg, has had during eight

[48] Zeitschrift f. Hygiene, Bd. vi, 1889.
[49] Münch. med. Woch., 1889, No. 43.
[50] Louisville Medical News, March 22, 1884.
[51] La Tuberculose en Belgique, Brussels, 1889.
[52] British Medical, 1891, vol. i., p. 463.
[53] Times and Register, Philadelphia, 1889, xx, p. 97.
[54] Deutsch. Archiv. f. klin. Med., Bd. 42, 1887, p. 219.

years, but one case of tuberculosis in an orphan asylum with an average of 100 inmates. The one case came in diseased and was promptly discharged as dangerous.

Objections can be raised to all these figures. Against Cornet's and similar cases it has been objected that the increased amount of tuberculosis was due, not to increased infection, but to the hardships of their conditions. No such objection can be raised where isolation has prevented farther infection, nor are the conditions of European soldiers or criminals worse during time of service or confinement than when at large.

Animals afford valuable information in many ways. The first thing of note is the great variation in the amount of tuberculosis. While in confinement the disease may appear in any mammal, and even in snakes and other cold-blooded creatures, it is, under usual conditions, confined to domestic animals. I say nothing of hens, since it is not at all clear that hen tuberculosis is the same as human; indeed, the evidence is fairly conclusive that in most cases it is not. Many cases are recorded where hens ate sputa and later developed tuberculosis; but when we isolate and so feed them the results are negative; when inoculated the same is most always the case. And, finally, the cultures from hens are allowed to be different by no less an authority than Koch. Personally, some years ago I fed quantities of sputa to hens and pigeons, and injected it by the syringeful, with no resulting tuberculosis.

Tuberculosis, though spontaneous among all domestic animals, is most common in cattle, then swine, then the others with much smaller numbers. Some speak of it as almost unknown in horses and dogs; this is not the case.

In cattle the amount of tuberculosis increases steadily with the age, and is also much influenced by sex. Thus, of 1,133,195 calves, 71 were tuberculous; of 1,958,132 grown-up cattle of all sorts, 25,163 (1.2%) were tuberculous; that is, the prevalence of tuberculosis in calves, as compared to cattle, is as 1 : 300. Few have given finer classifications. Goring [55] gives a per mille calculation, based on the reports of the inspectors of all cattle in Bavaria.

One thousand bulls	5.84‰
" bullocks	1.34
" cows	2.50
" heifers	0.35
" calves	0.09

Again, tuberculosis was distributed as follows.

Less than one year	in 1877, 64 (1.31%)	in 1878, 65 (1.30%)
One to three years old	" 328 (10.81%)	" 551 (1.20%)
Three to six years old	" 1,846 (37.80%)	" 1,730 (34.50%)
Over six years old	" 2,445 (50.07%)	" 2,360 (46.50%)

It is to be noted here that calves are those saved for cattle, and includes much older ones than those slaughtered for veal.

At Augsberg, 24,766 veal calves, with one case of tuberculosis, and 13,193 cattle, with 512 (3.95%), were slaughtered.

Strobl and Magen [55] give, for Münich in 1879, 1,125 cases of tuberculosis (or 2.5%), divided as follows:

Under one year	2 or 0.2%
One to three years	81 or 7.1
Three to six years	378 or 33.5
Over six years	664 or 59.2

From the *Veterinary Journal*, from the German:

11,227 oxen, with	51 cases.
1,657 steers with	8 "
1,389 cows, with	45 "
598 yearlings	3 "
30,477 calves with	1 "

Again:

23,592 calves, with	1 case.
8,537 oxen, with	167 cases, or 1.94%
5,008 cows, with	445 " or 8.88%

The figures are not very numerous, but show clearly that the increase of tuberculosis in cattle with age, as insisted upon by all European inspectors, is correct. Goring's figures have a special interest, in that the bullocks and bulls show a much higher rate than the heifers or even cows. Yet the males consume no more milk than the females, but they are kept in much closer quarters, that is much more exposed to dust infection. Sows and hogs which are kept together show no such difference. As a whole, the figures show a constant increase in tuberculosis with age, precisely what must result with a steady source of infection, and a chronic disease, and not at all the result where food during youth is the chief source of infection.

The figures of Bayard,[56] showing that the curves of tuberculosis in cattle and man follow each other closely all through Baden and Bavaria, are of interest. The case is cited to show the dependence of human tuberculosis on that of cattle. It would be just as reasonable to argue the other way. If men catch tuberculosis from eating the cattle, where do the cows get it from — eating each other? The proper place to look for the cause is in ways common to both, that is, indirect infection, not food.

In studying death-rates, it is to be noticed that from about the fifth to the twentieth year there is a marked diminution of the death-rate; or that there is a short high wave during the first five years; and another, with a sharp rise followed by a slow, steady increase, extending from the commencement of adult life to old age.

Some might hold that the first wave was due to infected milk, since there is some relation in time between the consumption of milk and the high death-rate. This requires a rather long step to a conclusion. The early years of life are noted for their great mortality from all sorts of causes, that is, young children are very vulnerable. During the first part of life tuberculosis spreads, becomes general with great rapidity, and immediately after develops a marked predilection for the nervous system. These are conditions peculiar to the age, not to the source of infection. The conditions of life during this period are also such as to offer very good opportunities for indirect infection. First, it is the period of closest personal contact, kissing and cosseting. Next, it is the period of life during which the head is in the sediment of the atmosphere. Young children live on the floor, older people on their feet or furniture. It is also the period of house-dwelling and bronchial troubles.

Can we conclude from the result of an autopsy, where the bacillus gained entrance to the body? There is no primary lesion as in syphilis, but is there of necessity any lesion at site of entrance? Apparently not, as shown by the numerous class of bone, joint and lymphatic tuberculosis, with healthy lungs, intestine

[55] Propagation of Tuberculosis, by Lydten, Fleming and von Hertsen; Woch. f. Theirheilte., 89, No. 9; Am. Vet. Journal, January, 1889, and May, 1890.

[56] Archiv. f. wissnschft u. prakt. Theirhielk., xv, 89, p. 1.

and skin. Our only hope, then, is to demonstrate that the lymphatic behind the site of entrance become tuberculous, while the others do not, or at least to a much less degree, if we are to accept autopsy statistics as usually gathered. This is partly true, partly not, and least of all in regard to the glands which interest us most, those of the mesentery and the lungs. Either, indeed both, sets of glands are often attacked without their organs being affected. More in fœtal tuberculosis, where the bacillus has entered through the cord, both sets of glands may form the chief lesion. In other words, the initial lesions are very apt to be concealed before death, owing to the generalization of the disease and its predilection for certain organs. Lump figures, therefore, are of little value. They show, however, two points of interest: first, in spite of all the sputa swallowed, intestinal tuberculosis is less frequent than pulmonary; second, the large amount of lymphatic tuberbulosis in the young.

Though we cannot advance far with figures in the mass, still quite a number of cases justify the pathologists in selecting the point of entrance. Thus Grawitz, in 197 cases, classed 152 as primary in the lungs, nine primary in the intestines, two or three as external, and the rest as unknown. Biediert, in 1884, could only find 30 cases of primary intestinal tuberculosis reported in the literature.

The statistics from cattle killed before the disease has come to an end avoid most of the difficulties inherent in autopsies, the initial lesion is not so much hidden. Thus Goring gives the result of 1,596 cases as follows:

Lungs alone infected	21%
Pleura and peritoneum only	28
Pulmonary and pleural only	39
Generalized	9
Genital lesion only	3

Unfortunately, I have been unable to find other similar tables; but it is evident from reading reports, that the above represent the combinations usually found. These, it will be noted, take no account of the intestine.

The cases of latent tuberculosis in man offer similar conditions to the slaughtered cattle. The disease has not spread. Where do we find these deposits? In the lungs. Kurlow[57] gives a table taken from the reports of several pathologists who have especially studied this subject. It is given below, with a few additions. All ordinary tuberculosis is excluded, so that the figures show the proportion of latent or cured tuberculosis in those dead of other disease.

Rogee,	100 old women.	Scars in the apices of	51
Dejerine,	100 "	" " "	51
Royer,	160 autopsies.	" " "	157
Bollinger,	250 "	" " "	69
Staudacher,	787 "	" " "	202
Massini,	228 "	" " "	80
Vibert,[58]	131 violent deaths.	" " "	25
	1,765 circa.		644

These figures agree closely with the results in cattle, and clearly indicate a large mass of primary lung, that is indirect, infection.

In view of all these data, — the observations on cattle, the seat of latent tuberculosis, and the like, — it is clear that indirect infection plays a prominent part in the spread of tuberculosis. It is to be noted that the observations including large numbers all point to this. I therefore feel justified in summarizing as follows:

It is clear that a certain amount of direct inoculation occurs.

It is highly probable that a larger amount of indirect inoculation takes place, as in skin tuberculosis, scrofula. Of this I have adduced no evidence.

Evidence is not in favor of flesh, after passing inspection, being a factor of any import.

Milk is clearly a source of danger, though judging from the data at large, not a considerable one.

Indirect infection is probably the chief mode of infection, the bacilli entering through the lungs, the skin and the alimentary tract, with but few exceptions.

The application of these conclusions is very clear, the inspection of food should be kept up as at present, People keeping private cows should be taught to be cautious of those which cough, and milkers' herds should be watched. To offset indirect infection, the State should see to it that the rooms occupied by phthisical patients are properly cleansed. At the time of the milennium people may always cough on handkerchiefs, keep their hands free from sputa, and always spit into improved cups, rather than on the floor; but at present they will not. The wealthy, who have more or less followed these rules for a long time, are relatively exempt from tuberculosis.

The one sure and ready way to kill a tubercle bacillus is to cook it hard for at least fifteen minutes; antiseptics are not safe in the peoples' hands. All infected clothing should be boiled before handling, not tucked away in a bag, then shaken out, counted and washed. Everything coughed up should be spit into special cups, and thoroughly steamed before emptying and washing. Patients should not cough all over the room, but hold a handkerchief before the mouth. All rooms liable to infection should be carefully cleaned, especially the floors, furniture, and first six feet of the walls. For this we must rely on washing, outdoor beating and dusting, and antiseptic solutions. The best antiseptic is carbolic acid, the stronger the better (never less than one per cent.) applied long enough to soak in thoroughly.

At some future time people may wake up to the conditions of the case, and demand walls and floors both smooth and washable, and the banishment of the dust-traps called modern furniture, provided they do not demand a certain degree of isolation of the phthisical and the systematic destruction of all tuberculous cattle.

In closing, I would disavow all ideas of having exhausted the subject or of having demonstrated the proof of more than a few points at most. The subject is a most difficult one. We want more careful and extended studies on the occurrence of the tubercle bacilli, on the effects of administering small numbers of the same, on the probable sources of infection in individual cases, and on the course of the disease as indicative of the source and time of infection.

[57] Deutsch. Archiv. f. klin. Med., xliv, p. 438.
[58] Centralbl. f. Bact. u. Parasit., Bd. iv, p. 519.

The Treatment of Viper Bites. — The Paris Academy of Medicine has awarded the Orfila prize to Professor Kaufman, of the Alfort Veterinary School, for his discovery of a specific for viper bites. The treatment consists in bathing the wound with a solution of one part of chromic acid to one hundred of water.

NOURISHMENT IN ACUTE DISEASE.[1]

BY FRANCIS H. WILLIAMS, M.D., OF BOSTON.

THERE are few questions in the treatment of disease which have to be decided so often during the daily routine of practice as those which concern the proper support and nourishment of the patient; and, further, there are not many things connected with the care of patients which are so difficult.

It is not easy to find a person competent to prepare suitable food; it is, therefore, the more incumbent upon the physician to be able to give proper directions as to its preparation.

The chief thing is to take pains, and those who can do this are rare people, whether physicians, relatives or nurses. This is why less is accomplished than there should be in the support of the sick. If we wish to succeed in avoiding nausea, vomiting and loss of strength and even loss of life, we must learn to offer nourishment to our patients in a suitable form.

It will be my endeavor to recall to your minds a few of the principles to be kept in view in feeding patients acutely ill.

Food may be classified as follows:

(1) Water, (2) Salts, (3) Fats, (4) Sugars (Fruits), (5) Starches, (6) Albuminoids.

The classes of foods known as starches and albuminoids are the ones which require the most care to offer to a patient in a proper form.

Water is of prime importance. Consider for a moment the composition of the body of a man weighing 154 pounds, as illustrated by these blocks. He is 108 pounds water, or about two-thirds.

It does not follow from this that we need give every patient several pints of water a day; by no means, but it is fair to infer that water, of a suitable temperature, should not be denied the sick, and that patients too young, too delirious, or too ill to ask, should not be neglected in this regard. The physician should see to it that water is offered the thirsty economy in all cases, nature demanding it though the patient makes no request.

Salts are present in small proportion in most foods, and are essential constituents of our diet.

Fats as a rule are not tolerated by patients acutely ill, and their use should be limited to such forms as are finely divided, as in milk or yolk of egg (and even in milk it may be necessary to reduce the amount of fat by skimming off the cream).

Common Sugar is rapidly and perfectly changed into grape sugar and into maltose before it is assimilated.

Grape sugar and maltose are very soluble and easily absorbed, and for this reason seem a very desirable form in which to give nourishment. Horlick's and Mellin's foods are examples of preparations made up chiefly of saccharine substances.

Fruits are valuable to give variety to the diet and to contribute water, which they contain in large proportion. Most fruits contain 85 to 90 odd per cent. of water, some sugar, and the citrates, malates and tartrates of potassium. Other fruits, such as grapes and bananas, contain sugar in considerable proportion, to 20 per cent., and their value as foods is not to be despised. Among dried fruits, dates and figs contain 60 per cent. of sugar and 6 per cent. of albuminoids.

The value of certain fruits for persons who are predisposed to uric acid, gravel and concretions in the bladder I shall not discuss here, though it is well worthy of attention.

Though we take foods into the stomach in the solid form, it is necessary that they be made soluble before they can be assimilated. The classes of foods which we have thus far considered are readily absorbed, namely, water, salts, fats and sugars; they are all liquid or readily soluble substances. In the remaining classes, starches and albuminoids, we have foods with which there are several steps to be gone through before they can be taken up by the system.

With all starchy foods, like grains, potatoes and rice, it is necessary to break the starch granules by heating or some other simple process, and before the starch can be absorbed it must be converted into a soluble substance, such as dextrine, which is the same in composition as starch. Starches, therefore, are not absorbed as such, but must first be rendered soluble.

Uncooked starches vary very much in the rapidity with which they may be converted into sugar by the action of the saliva. The starch of Indian corn is converted in three minutes, whereas wheat starch takes forty minutes and potato starch three hours. After thorough cooking, all starches require nearly the same time. It is, therefore, important to have starchy food well cooked before it is given to patients.

Arrow-root forms by cooking with water a mucilaginous liquid, not a pasty mass; it is, therefore, not apt to irritate the stomach and intestines. It should, however, not be used alone for more than a few days together, as it contains too little of the other constituents of a proper diet. In this it differs from rice or potato or bread, which contain gluten, salts and fats in addition to starch. Rice is better steamed than boiled, as it loses to boiling water much that is valuable. Boiled potatoes are for the same reason less nutritious than baked ones.

As regards *albuminoids*. Wholly without albuminoids, unless the disease is of short duration, the patient cannot exist. Since they are imperatively needed, they should not be omitted from the diet, even where digestion fails almost completely.

Albuminoids are complex in composition and decompose readily, and in their preparation more care is required than with any other kind of food. To avoid decomposition, they should always be fresh; and to prevent losing the albuminoids by coagulation, they should not be heated to too high a point.

To prepare meat foods properly, two things must be borne in mind. (1) Albuminoids as a rule coagulate when heated to boiling. (The casein of milk is an exception to this.) (2) To obtain a good meat flavor, the meat must be subjected to a temperature much above the coagulating point of albumen. It is, therefore, necessary to resort to two procedures, one which has for its object to extract the flavor, the other to extract the albuminoids without coagulating them.

If we treat meat with boiling water, we get beef-tea, which contains only a small percentage of solids and almost no albuminoids. This applies to all clear beef-tea. Beef-tea is of service in two ways: its taste and odor are agreeable, and together with the heat of the hot water, which acts as a stimulant, it makes a valuable article for use in the sick-room. Not as a food, but as a flavoring.

Some of the extracts of meat made with hot water may be used instead of ordinary beef-tea, thus saving

[1] Read before the Massachusetts Medical Society, June 10, 1891, and recommended for publication by the Society.

much time. Liegbig's and probably similar extracts of beef contain no fats, gelatine or albumen. It is desirable to use only a small amount of extract, say one-third of a teaspoonful to a teacupful of hot water, as too much gives an unpleasant flavor.

Now as regards the juices of meat which contain albuminoids in solution.

From raw meat one cannot obtain as much juice as is easily expressed from the same amount of meat which has been previously heated. The reason is this: the envelope of the muscular tissue is a substance similar to gelatine, which swells and dissolves when heated, and thus after broiling the liquid portions of a steak flow out more readily. A steak when well broiled swells; if it is cooked too long, the albuminoids coagulate, it loses moisture, shrinks and becomes tough. A slightly broiled steak may be cut into square pieces, and pressed or squeezed or twisted in a piece of cotton cloth to extract the juice.

In administering beef-juice, great care should be exercised to avoid heating it to 136° F., at which point its albumen coagulates in flakes. Beef-juice, though fourteen times as rich in albuminoids as beef-tea, is so raw in flavor that it is rejected by many palates. To overcome this objection, it is only necessary to add a proper quantity of any extract of beef of good flavor to make it delicious, — about the size of an almond to an ounce of beef juice. Thus by a union of two bodies, one rich in albuminoids and the other rich in flavor, we get something that is superior to either. Beef juice is an excellent article of diet where solid food cannot be given, but it is somewhat troublesome to prepare. A pound of meat yields about four ounces of juice; it therefore costs about five cents an ounce.

Soluble albumen, such as is contained in expressed meat juice, is absorbed in the rectum to nearly the same extent as complete peptones. Albuminoids in solution are not precipitated in the stomach and afterwards dissolved, except in the instance of casein of milk, which, as already said, is first coagulated and then dissolved.

Being accustomed to prescribe meat juice, I was much pleased to find a preparation of it manufactured by a well-known firm. I hoped in this to realize all the advantages of beef juice, without its inconveniences. An analysis of this preparation which was made for me, was disappointing, as it was found to contain only one-third of one per cent. of albuminoids, compared with seven per cent. in beef juice; it had also more salt than is desirable, — twelve and one-half per cent. This is mentioned to illustrate the advantage of using foods which are prepared at home, in preference to those made by manufacturers, of which the composition is unknown. This preparation costs thirty-five cents per ounce, though it is only one-twentieth as rich in albuminoids as beef juice costing about five cents.

If one cannot conveniently get albuminoids from meat, a very nutritious broth may be made by means of hot water into which an egg has been stirred. Here we may heat three ounces of water to not above 149° F., and stir into a raw egg. The liquid is milky if we use the yolk; clear if only the white is used. It has little taste, which is an advantage with many patients, or it may be flavored with beef extract.

If one has no thermometer at hand, the temperature of the water may be determined in two ways. If the finger can be kept in the water for two seconds, or about the time it takes to count ten hurriedly, the temperature is not too high. Liquid of this temperature is apt to burn the tongue. One hundred and forty degrees F. is as hot as one can drink a liquid, and 122° F. is a very comfortable temperature for a hot drink.

When these experiments were begun, it was feared that a temperature sufficient to coagulate albumen might be so low as to be lukewarm; but a few tests showed that any temperature which can be borne in the mouth will not coagulate albumen. (Though these two temperatures differ by only a few degrees.)

It is interesting to compare the composition of four liquids containing albuminoid constituents.

Beef tea	about ½%
Beef Juice	about 7%
Raw egg, with three ounces water	about 5% albumen, 6% fats
Milk	4% albumen, 4% fats, 4% sugar

In all of these we get a good proportion of salts.

It may happen that the digestive organs cannot tolerate eggs, or, more especially, milk. But by means of powders which contain pancreatic ferments, such as Fairchild's peptonizing powders, milk may have its albumen converted into albuminoids, which do not coagulate by heat, and into diffusible albuminoids or peptones. In the ordinary process of peptonizing milk, both of these bodies are formed, but the proportion of peptones is small.

In the case of milk, which forms solid curds in the stomach, a partial conversion of its casein into albuminoids which do not coagulate, has obvious advantages. Peptonized milk is so well known that I hesitate to do more than mention it to you; on the other hand, it is so useful a preparation that I will say a few words about it for the sake of such practitioners as may not appreciate its value, especially as there are a few precautions necessary to its successful use. The powder is put in a quart bottle, with a little water, milk is added and the whole is placed in a vessel of water about as warm as the hand. The process of partial digestion goes on while the milk is at this temperature; boiling stops it, cold delays it and preserves it. If the digestion is continued in this way for twenty minutes or more, the milk has a bitter taste. If this taste is objected to by the patient, the time may be shortened to five minutes or even less, in which case, however, the amount of artificial digestion is small. If the milk is to be given by the rectum, the digestion may be kept up for two hours; in this case the milk does not curdle when acids are added to it. About four quarts of peptonized milk will support a person in health.[2] For a patient in bed, less than this is sufficient, the amount varying with each individual.

Milk treated in this way contains albumoses and some peptones. For our purposes, we may broadly define albumoses and peptones as soluble albuminoids, which cannot be coagulated by heat or dilute acids; and peptones have the further property of passing through the membrane of a dialyser, and represent a later state of digestion. Even after prolonged digestion, we get in peptonized milk only a small amount of peptones, the casein being converted chiefly into albumoses.

The bitter taste of peptonized milk is not thoroughly understood; albumen and albumoses are tasteless, and peptones have a cheesy taste.

Meat albuminoids are converted by the stomach into bodies which are soluble or diffusible, and these substances when artificially produced have been regarded

[2] Horton-Smith: Journal of Physiology, April, 1891.

as calculated to render great service in invalid feeding.

It is known that an increased secretion of urea appears after the administration of peptones, just as it does after the ingestion of unaltered albumen, and that the chemical composition of peptones differs little from that of ordinary albuminous bodies. They have the manifest advantage of being easily and immediately absorbed. Peptones, so far as we yet know, may be used during short periods of extreme exhaustion, when perhaps few other albuminoids could be assimilated.

Many preparations have been offered for sale which purport to be peptones, but which really contain only a small amount of them. Many such preparations are soluble in water, but have a very disagreeable odor and unpleasant taste.

So much in outline for the various classes of foods.

Since acute disease is accompanied by fever, we must consider the effect of feeding in cases where the temperature is febrile in character; also, the amount of food, its quality and quantity, together with other conditions affecting its absorption.

In acute disease accompanied by fever, what are the conditions? The body loses weight, the urea especially is increased, and carbonic acid and water are excreted in larger amount than in health. All of this loss is not dangerous if allowed to go on for a few days only, and if the amount does not exceed certain limits.

But to replace these losses we are at a disadvantage as regards the ability of the system to assimilate food. In fevers, the appetite is small, or may be completely lost. The saliva, the gastric juice, the pancreatic fluid, the bile, are less efficient in action, or are diminished in amount during high temperature. The stomach is very sensitive, in part perhaps through sympathy with the increased sensitiveness of the nervous system as a whole. If there is much hyperæsthesia of the digestive tract, as in typhoid, in peritonitis, in dysentery or gastro-enteritis, one must be careful not to give too much food, and it should be in liquid form.

It is not, however, the administration of food, but the administration of unsuitable food, that we have to fear, and also the giving of nourishment in quantities unsuited to the digestive powers of the patient.

One should not give the patient what he cannot digest, nor should we give him less than he can assimilate. The attendant must have a constant watch over the condition of the patient's powers of digestion, and carefully adapt his food to his capabilities, especially during convalescence.

Our attention should be devoted not only to what is put into the alimentary canal, but also to what goes out. For example, if curds of undigested milk are found in the stools of a typhoid patient, the quantity of milk should be diminished, or it should be diluted.

Large quantities of milk are often given to typhoid fever patients, to their great detriment, and excess of zeal in feeding and too little care in the preparation of the food, cause much of the intestinal trouble that complicates these cases. In diphtheria, foods which are soft in consistency, rather than liquids, may be used, as they are less apt to get into the trachea.

Every careful observer of the sick will agree that many patients are starved in the midst of plenty, simply from the want of attention to the ways which alone make it possible for them to take food. For example, if the patient has a fever with remissions or intermissions, it is of the first importance to remember that the ability to digest food at these times is greater, and the more nourishing portions of the diet should be given during the remissions and intermissions.

As far as practicable, the mouth should be kept clean. The tongue may become cracked and dry; it may stick to the sides of the mouth, and cause so much pain when the attempt is made to swallow, that the patient refuses food which he would otherwise take. The mouth should be rinsed with water after taking food, and should be carefully cleansed with an antiseptic solution from time to time. In a word, for extreme cases, the important thing is liquid food. We should give water. We should give sugars (starches have no taste, but are less readily absorbed). Fats are not tolerated. Salts are present in nearly all foods. We should give albuminoids, in beef juice, in peptonized milk. Ordinary milk becomes solid in the stomach.

The physician should never lose sight of the patient's likes and dislikes; one cannot diet a patient from a book, or from the chemical composition of foods. On the other hand, it is incumbent upon the physician to know how to choose such a variety in diet as to include both what is palatable and what will afford a proper amount of nourishment.

It has been one of the aims of this paper to show that the preparation of some valuable foods is entirely in our own hands, and that we need not be dependent upon manufactured preparations, of whose composition we are often ignorant: and further, to emphasize many details concerning the nourishment of patients which, though well-known and often repeated, are also too often overlooked.[2]

Medical Progress.

RECENT PROGRESS IN OBSTETRICS.

BY CHARLES M. GREEN, M.D.

THE INFLUENCE OF MENSTRUATION ON LACTATION.

THERE is no question of practical importance on which the opinions of physicians differ more widely than that of whether or not the reëstablishment of menstruation should preclude the continuance of nursing. Schlicter[1] (Vienna) has endeavored to settle this question by a series of investigations in the new Austrian Foundling Asylum.

In order to know surely the influence of menstruation on lactation, it is necessary, first, to prove in a number of cases whether nursing children manifest any changes on the reëstablishment of menstruation in the nurse, and, if so, of what nature. To determine this point, in a series of fifty-two cases, the suckling was weighed before, during, and immediately after, the menstrual epoch, and averages prepared of the results before, during, and after the period, and, when possible, at later times: the appearance of the dejections and the general condition of the infants were also examined and recorded. Secondly, the nurse's

[1] Wiener Klin. Wochenschrift; abstract in Centralblatt für Gynäkologie, 1891, No. 2.

[2] Among other authors, I am indebted to Munk & Uffelman, to Bunge's Physiological Chemistry, and to the recent books on Food by Church & Yeo, and especially to Mrs. Richards, instructor in Sanitary Chemistry in the Massachusetts Institute of Technology, who kindly made the analysis of beef juice.

milk was analyzed in thirty-three cases, in order to determine whether any present condition of dyspepsia or intestinal catarrh in the infant could be attributed to changes in the milk due to menstruation, or whether the infant's condition was accidentally coincident with the nurse's menstrual period. Schlicter found that there was an increase in weight from day to day during menstruation, in the case of many children a considerable gain. Taking the averages there was a marked gain in weight during and after the period over that before the period, and a persistence of this increase, though to a less extent, in the later time. The general condition of the nurslings during menstruation was entirely satisfactory. The milk analysis gave, on the average, less differences between the milk during and after menstruation, than between the morning, noon and evening milk of one and the same non-menstruating nurse. The author therefore concluded that menstruation in itself exerted no unfavorable influence on the development of the infant; and that if there were any apparent disturbances in the infant's condition, they should be attributed to the neglect and want of care on the part of the nurse, attendant on the malaise of the menstrual molimen.

Schlicter groups his conclusions as follows:

(1) After the sixth week post partum returning menstruation of the nurse is injurious to neither mother nor child.

(2) Menstruation or hæmorrhages before the sixth week may possibly retard the development of the child.

(3) Illnesses of the infant arising during its nurse's menstruation, like dyspepsia, colic or intestinal catarrh, are to be regarded as accidental coincidences, and accordingly are to be treated, not *à priori* by changing the nurse, but as ordinarily, by the usual methods.

HYPEREMESIS GRAVIDARUM.

Kaltenbach[3] (Halle) has read a valuable paper on this subject, excluding from consideration all complicating affections that excite vomiting in the non-pregnant state. In hyperemesis of pregnancy in its narrower sense, post-mortem appearances in the sexual and digestive organs are negative or non-characteristic. Uncontrollable vomiting of the pregnant, like the lighter forms of this affection, is, in his opinion, of nervous origin. The excessive increase of the symptom is not to be ascribed to definite pathological changes in stomach or uterus, but to a peculiar condition of the nervous system, in which reflex irritability is increased and reflex inhibition is diminished: in short, it results from a functional neurosis, — from hysteria. In a case observed two years ago, in the Halle clinic, an extremely hysterical gravida was cured of her vomiting from day to day by a simple daily washing-out of the stomach, after it had been suggested to her that now the cause of her sickness had been removed, and she was destined to vomit no more. Since that time further conclusive cases had been reported to the reader. The reference of hyperemesis to hysteria clears up many hitherto dark points in the etiology of the affection,— the inexplicable sudden cessation of the vomiting in consequence of any psychical or somatic influence.

Anomalies of uterus and stomach have only the significance of favoring causes in addition to the neurosis. Should further observation prove the frequent or constant connection of hyperemesis with hysteria, our therapeutic ideas must be thereby greatly influenced. We shall be more reluctant to resort to artificial abortion than heretofore. We shall treat the fundamental neurosis, and especially seek to impress the patient psychically. Already good results have been obtained with anti-hysterical measures. Frequently the patient will have to be removed from unfavorable surroundings in order to be treated successfully.

[3] Centralblatt für Gynäkologie, 1890, No. 49.

HEREDITARY DURATION OF LABOR.

Auvard (Paris) has reported[3] seven cases in which the length of the labors of the daughters surprisingly resembled that of their mothers, the daughters being very much like their mothers in every respect. On the other hand, he has observed cases in which women resembled their fathers, where the duration of labor was like that of the father's mother. Auvard naturally restricts his remarks to such women only as have no impediments in labor peculiar to themselves.

[Such observations have no especial practical value, but they are not without interest; and the making of them may serve to relieve the tedium of ordinary obstetric practice among those who have the almost bygone opportunity of attending both mothers and daughters in their hours of greatest need.]

PROGNOSIS AND TREATMENT OF PUERPURAL ECLAMPSIA.

Löhlein (Giessen), read a paper[4] on this subject before the German Society for Gynecology at Bonn, May, 1891, based on the material of all the great German clinics. In 52,328 cases of labor, eclampsia was observed in 325, the proportion being one in 161: the highest ratio occurred in the Charité, one in 67; in the three great Vienna clinics the rate was one in 318. If all the cases transferred to the various clinics in a state of eclampsia are excluded from consideration, convulsions occur in the German clinics among those who come under observation by admission before labor (as is customary in many foreign clinics) once in 330 cases. This proportion is higher, however, than is usually accepted; the commonly received ratio being 1:500, as given by Scanzoni and Schröder, and accepted by Lusk.

Of the 325 cases, 63 died of eclampsia and 14 of other complications: excluding the latter cases, the mortality from eclampsia was only 19.38%, an indication of great progress in the treatment of this most serious class of cases, in which the usually accepted mortality is at least 33%. The lowest mortality found by Löhlein, 11.6%, was in primiparæ in whom eclampsia first appeared post-partum; the highest, 29.4%, in multiparæ who were seized before labor began. If the cases fatal by complications are included in the death-rate, the mortality reaches 23.63%, — still a very favorable showing. The fœtal mortality is not given.

Among the sequelæ, which were noted in the 248 survivors, were observed 13 cases of pronounced psychoses, most of which fully recovered; five pneumonias, three pleurisies, and 22 cases in which there were lasting affections of the kidneys.

Operative interference was necessary in 71.1% of

[3] Arch. de Tocologie, 1888, No. 9; abstract in Centralblatt für Gynäkologie, 1891, No. 20.

[4] Centralblatt für Gynäkologie, 1891, No. 23.

the cases, to wit, — 108 forceps operations, 19 versions, 13 destructive operations, and seven Cæsarean sections: of the latter five were on the dead, one on the moribund, and one on the living, — the last with favorable result for mother and child.

As regards medicinal treatment, Löhlein and numbers of others, acting on the warm recommendation of G. Veit, in 1887, had employed by preference large doses of morphia. In eight clinics in which the morphia treatment was used, the maternal mortality was only 13.8% against the general average 19.38%.

THE MANAGEMENT OF OCCIPITO-POSTERIOR POSITIONS.

Zinke (Cincinnati) has an interesting paper[5] embodying the report of a case of what he believes to have been a primary occipito-sacral, or what the older writers classify as a sixth, position. Traction with forceps completely extended the head, and it was born as a face by flexion without laceration of the soft parts.

Primary occipito-sacral positions are of rare occurrence, and by many writers are believed never to occur: Madame Boivin is credited with having seen two cases; Naegele and Meigs each two, and Dewees three. Certainly such cases are of such rarity as to make it inexpedient to cumber obstetric nomenclature with a classification of them among the usual positions. Whether primary or secondary the management of all posterior positions of the occiput is essentially the same: intelligent and skilful effort must be invoked to promote anterior rotation; and failing this, the head must be extracted as nearly as possible in a condition of perfect flexion to secure the engagement at the outlet of a favorable diameter, or else the head should be completely extended and delivered as a face, as was done in Zinke's case.

In his remarks on the general management of occipito-posterior positions, Zinke gives prominence to one expedient, which, although known and practised by many, is not, it is believed, thoroughly appreciated. When it is evident that anterior rotation will not take place, and the head has become arrested, Zinke recommends introducing the hand into the vagina under complete anæsthesia, seizing the head and rotating into an O. L. A. or O. D. A. position, according to its original engagement, and holding it there until it is fixed in its new position. This procedure has never failed in Zinke's hands, and it has served the reporter well in a number of cases. To insure success in this manipulation, however, the reporter has found it important to promote simultaneously, the anterior rotation of the child's body also, either with the disengaged hand or with the aid of an assistant, by external taxis through the abdominal wall.

Blanc (Lyons) published[6] in 1887 three cases, and later two cases, in which manual rotation of the persisting posterior occiput was successful. Subsequently he reported[7] two cases in which, although manual rotation was accomplished without difficulty, the head returned to its former position when released by the hand. In both these cases the pelvis was faulty, — in the one case funnel-shaped, in the other a simple flat: possibly, Blanc did not, in these cases, secure by external manipulation anterior rotation of the body. At all events manual rotation is almost always successful and is unattended with danger in skilful hands.

[5] American Journal of Obstetrics, January, 1891.
[6] Lyon Medical, 1887, Nos. 3, 6 and 8.
[7] Arch. de Tocologie, 1888; abstract in Centralbl. für Gynäk., 1891, No. 20.

STATISTICS OF TWIN LABOR.

Brém (Budapest) has reported[8] some interesting statistics concerning multiple pregnancy and labor, based on 10,000 labors occurring in Kézmarsky's clinic from 1869 to 1887. In the 10,000 cases were 127 cases of twin labor and three of triplets, — twins occurring once in 78 cases, and triplets once in 3,333. Of 252 twins, 133 were boys and 119 girls, the ratio of boys to girls 111.76 to 100, being somewhat higher than in single births. In 37% of the cases the children were of opposite sex; in 34% both were boys; and in 28% both were girls: these relations agree with Lusk's statistics. Of the mothers, 25% were primiparæ, and 75% multiparæ. In 51% of the cases there were two separate placentæ, and in 26% the two originally separate placentæ were united at their proximate borders: in both of these classes there were two chorions and two amnions, which must in each case have developed from two distinct ova. In 23% there was a single placenta (one chorion and two amnions) which must have developed in each instance from a single ovum with a double germ. In one case, which according to present knowledge, must have sprung from a doubled-yolked, single ovum, — a single placenta with freely anastomosing vessels — there was dropsy of one amnion, and scanty fluid in the other; the child in the former sac being normal, while that in the latter was an acardiacus.

Of 248 twins the presentations were: Head in 67.74%, breech in 29.43%, shoulder in 2.83%.

The relative positions are shown in the following table, with a comparison of Spiegelberg's statistics, which latter were based on over a thousand cases:

	Brém.	Spiegelberg.
Both heads presenting	47.58%	49.00%
Head and breech	35.47	31.70
Both pelvic presentations	11.29	8.60
Head and transverse	4.83	6.18
Breech and transverse	0.80	4.14
Both transverse	0	0.35

The commonly accepted opinion that the larger twin is usually born first is not borne out by Brém's statistics, since in over 43% of his cases the smaller child came first. In Spiegelberg's experience the larger twin was usually born last.

In Brém's cases labor was normal in 75%; in 25% there was operative interference with one or both children. The length of the labor in primiparæ was on the average, 21 hours 55 minutes, as against 15 hours 52 minutes in single labors in the same clinic. In multiparous twin labor the average duration was 11 hours 42 minutes, against 11 hours 8 minutes in average single labors.

The interval between the births of twins was less than one hour in 83.04% of the cases, from one to six hours in 12.50% of the cases, more than six hours in 4.46% of the cases.

The practice in this clinic differs from the teaching of Kleinwächter, who taught that the second twin should be delivered, artificially if need be, immediately after the birth of the first. In Kézmarsky's clinic the second twin is interfered with only in the direct interest of mother or child; and the maternal mortality in 127 twin labors was 4.72%, as against 13.11% in 61

[8] Orvosi hertilap, 1890, Nos. 42-47; Centralblatt für Gynäkologie, 1891, No. 8.

cases of Kleinwächter's. The latter, however, lost a somewhat smaller per cent. of the children. [In regard to interference with the second twin, the writer pointed out ten years ago in a paper on twin-labor, that an important duty of the obstetrician, after the birth of the first twin, was to *prevent a malposition of the second*, for the reason that malpositions of the second twin are almost always secondary. If such malpositions are prevented, or promptly rectified before an improper engagement of the second twin, operative interference with the second child will be seldom necessary.]

Simultaneous entrance of both children into the pelvis occurred in only one case, in which the chin of the first child, born by the breech, became locked on the head of the second. [To avoid this possible misfortune, it would seem to be good treatment to prevent the engagement of a first-coming breech by pushing it aside and securing the descent of the other child when it presents the head.] Prolapse of an arm occurred eight times; prolapse of the cord, four times; placenta prævia, once; eclampsia, three times; post-partum, atonic hæmorrhage occurred in one-sixth of the cases. [This is a danger always to be watched for and guarded against in twin labors, owing to the relaxed and over-stretched condition of the uterine walls.]

The average length and weight of the children was 18.4 inches and five pounds six ounces, respectively. The twins were non-viable in 15.74% of the cases, premature in 15.74%, and mature in 68.50%. The maternal mortality was, as previously mentioned, 4.72%; the morbidity, 33.3%; while in single births in this clinic the mortality and morbidity amounted to 1.16% and 27.1% respectively.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

May 20, 1891, Meeting called to order by the Secretary at 8 P. M. The Chairman being absent, on motion Dr. W. H. H. Hastings was chosen Chairman *pro tem.*

The first paper was read by Dr. J. Payson Clark, upon

SARCOMA OF THE NOSE, WITH REPORT OF A CASE.[1]

Dr. Cheever, in opening the discussion, said: The paper of Dr. Clark is very complete and very interesting. I was not aware that so few cases of this affection had been reported. What I have done generally for these affections has been by surgical methods. So far as my experience goes, I do not agree with the reader in relation to recurrence; at least in regard to innocent growths becoming malignant. In the present manner of treating these growths, we possess distinct advantages over former methods of treatment. In the old time operations in the nose we were brutal in the extreme. Forceps were introduced into the nasal orifice, and without light, and without sight, everything was removed which could be obtained. I have never myself seen a change in the nature of the growth from simple polypus to sarcoma. I have operated for recurrence of naso-pharyngeal fibromata, and the second operation has usually been final. This is not true of the sarcomatous growths. Operation in this class of tumor may relieve the disease and prolong life, but a recurrence is almost certain to occur. I remember a case occurring in the practice of Dr. March, of Albany, in which I operated no less than five times for sarcoma, within the space of five years, with the effect doubtless of prolonging life, and rendering the patient more comfortable though the disease was not eradicated. The operation for removal of abnormal growths in the nose may be done in several different ways. One of these is by means of an incision along the border of the ala of the nose, thereby separating the wing of the nostril from the cheek, and lifting it away from the face, by which a greatly enlarged opening is secured for reaching the interior of the nasal cavity. This does not destroy the septum, and the contour of the nose is in no way affected. The wound heals rapidly and perfectly, and no disfigurement is apparent.

For the higher growths the operation proposed by Ollier is undoubtedly the best. In this operation the nose is divided from its attachment to the bones of the face by sawing through the tissues at the root of the nose, and when all the bony structures have been divided the nose is attached only by the cartilages and soft tissues at its lower end. The body of the nose is then drawn away from the face, and thus exposes a large opening high up, by means of which access may be had to all parts of its interior. The resulting deformity is almost nothing, and in this photograph of a patient thus operated upon, there is no apparent cicatrix from the operation. The form and shape of the nose are undisturbed by the operation. Ollier's operation gives access to the antrum and the pharynx and to the higher parts of the nasal cavity, and the turbinated and ethmoid bones are accessible. In an operation I devised, the naso-pharyngeal spaces are reached by sawing the superior maxilla transversely, and replacing it. In another operation it is proposed to separate the two lateral halves of the superior maxillary bone and thus to reach the seat of the growth through the mouth. Nélaton devised a method of reaching certain portions of the pharyngeal and nasal cavities by dividing the soft palate, and thus exposing a large portion of the posterior nasal space. I have no reason to think that cauterization has a tendency to provoke renewed growth in these tumors.

I recently treated an old man for disease of this kind, by the use of caustics, but did not obtain so good a result as by the curette. This was followed by the application of fuming nitric acid, and subsequently by an application of potash. In the case reported by the reader, the patient will probably need further operation. It will become necessary to open the face, and thus gain a larger opening through which to reach the seat of the pathological growth, and secure its entire obliteration.

My views are rather conservative in regard to the operations for removal of growths about the face, and are at variance with the opinions of some other distinguished surgeons. Some time ago I had a controversy in the pages of the medical press with Dr. Sands, of New York, who advocated the entire removal of all the soft parts of the bones which were in any way

[1] See page 239 of the Journal.

affected by the presence of a foreign growth in the cavity of the nose. I do not think that so extensive mutilation of these structures is always justifiable or necessary.

DR. C. F. FOLSOM read a paper upon

SOME POINTS REGARDING GENERAL PARALYSIS.[2]

DR. FITZ was expected to open the discussion, but was not present.

DR. C. IRVING FISHER presented a report for the Committee appointed by this Section in reference to the Social and Statue Recognition of Syphilis,[3] and stated that he was able to inform the Society that their Committee had not been idle. The action of the Committee has been this:

(1). To bring the subject before the Massachusetts Medical Society upon the occasion of its last annual meeting.

(2.) To present the importance of this matter to the attention of the different District Medical Societies in the Commonwealth. Blank petitions were sent to all the different societies, which were filled out and presented at the State House. The committee laid the subject before the Homœopathic Medical Society, and the members of that Society took an active part in urging the necessity of the passage of the measure which the committee represented.

(3.) The committee were granted a hearing before the Committee on Public Health of the Commonwealth, who reported unanimously in its favor. Some senator objected to the bill as unconstitutional; whereupon the Committee changed the bill so as to make its application relate first to paupers, which bill it is hoped may pass. Another bill provides that if a prisoner is sick at the end of his term of imprisonment, he shall be retained under supervision until his disease is no longer dangerous to himself or others. This bill is in the hands of the Judicial Committee at the State House. There has been a great deal of interest in the passage of the bill among the members of the legislative bodies, and all are convinced that such a bill should pass. Public opinion has been to a considerable extent aroused upon the subject, and a degree of interest awakened never before known in relation to the care of patients with syphilis.

DR. C. F. FOLSOM said that it is not generally known that there was an effort at one time to care for patients with syphilis by means of the Public Charitable Institution upon Rainsford Island. From this fact the hospital upon this island became to all intents and purposes a syphilitic hospital, and was generally known as such. The nature of the disease for which it was used became so notorious, that when the girls who had been treated there were returned to the city, they would not infrequently be met upon the dock on the arrival of the steamer, and be conveyed to their destination in a barouche, with the utmost attention upon the part of their male admirers. At length it became necessary to suspend the reception of this class of patients in the hospital, and since this time there is no place in this city where such patients can be received for care and treatment. At the same time, it was strongly felt by the public that something ought to be done to secure some degree of immunity from the disease, and the matter was placed in the hands of the Judiciary Committee of the State. It was decided that the attempt to restrain persons suffering from this disease within the house of detention or the almshouses or prisons of the State would be unconstitutional, and the subject never reached the stage of application. In Tewksbury, a court was established for the trial of prisoners, but when the patients with syphilis became aware that they might be detained on account of disease, the number of admissions with this disease became markedly less, and many of the patients in the institution would jump the fence and thus make their escape. The women could not do this so well, and only occasionally made their escape.

The fate of this attempt at law-control of syphilis is interesting. The politicians at the State House had many friends and constituents who had syphilis. One of these legislators undertook to get the law repealed, and after a time succeeded by means of the introduction of a bill to that effect, which came up at a time when few friends of the original bill were present, and the repeal was effected.

In England the Lock Hospitals have done much to diminish the dangers to the public from syphilis. These institutions are generally misunderstood by the public, who imagine that they are hospital-prisons, in which persons with venereal diseases are confined until they may be cured of their disease. This is not true, the hospitals were founded by Mr. Lock, M.P., and residence in them is entirely voluntary upon the part of the patients. They do a great work in the care of patients who would otherwise have no treatment for these affections.

DR. MASON; In bringing this subject before the Society it is believed that some good may be accomplished in the formation of public opinion and in the statement of the fact that there is no ward or other place of similar character in the city of Boston, with a population of 400,000 souls, in which cases of syphilis can be received and cared for. Probably no city of the world is so poorly provided with facilities for the reception of cases of this and allied diseases as is Boston. Legislative enactment in the premises does not promise much at present.

DR. FISHER stated that there is at present considerable interest among the members of the Legislature in relation to state control of syphilis, and he is frequently consulted in regard to measures for its restriction.

DR. V. Y. BOWDITCH for the Committee appointed by this Society made a report upon

THE CONDITION OF THE STREETS OF BOSTON.

As the result of a paper read at one of the meetings of this body by Dr. Langmaid, a committee consisting of Drs. Bowditch, Knight and J. C. Warren was appointed to take action on behalf of the Society. That committee has had repeated consultations with two mayors, the boards of aldermen and with the governor. Certain results have already been obtained, and the work will be pressed as thoroughly as possible. Within a few days the committee are to meet the board of Police Commissioners and still further advocate the need of clean streets. Dr. H. J. Barnes has also been indefatigable in the same direction, and has aided the labors of the committee. It is necessary that individual as well as combined effort should be made to accomplish the end desired. In New York, Dr. Loomis has been engaged in the same work, where gratifying results are promised in the near future.

[2] See page 236 of the Journal.
[3] See Journal, vol. cxxiii, p. 110.

Dr. Harold Williams exhibited samples of a new preparation for the

TREATMENT OF DISEASES OF THE THROAT AND PHARYNX

in young or refractory patients in whom antiseptic applications to the throat become necessary. The desired articles are incorporated in the form of a compressed tablet, which is flavored with peppermint, and has no appreciable taste of the antiseptic substances contained in the tablet. Those shown to the Society were made of salicylic acid, corrosive sublimate, borax, etc.; and in no sample was there any disagreeable taste. They are prepared from formulæ of Dr. Williams, by Wyeth & Co.

Recent Literature.

Hypnotisme et Croyances Anciennes. Par le Dr. L. R. Regnier. 8vo, pp. xxiii, 223. With forty-six illustrations and four plates. Paris: Aux Bureaux du Progrès Médical. 1891.

The idea is current that hypnotism dates back to a rather remote antiquity; that it has been practised by the Hindoos for centuries and that it was not unknown in Egypt and Greece. The object of the present work is to study carefully the history of hypnotism, and to see how far the current idea is correct. That natural somnambulism must have existed from all antiquity must be admitted. The physiological and pathological conditions have varied so little within recorded time that such conditions must necessarily have arisen, just as we know that ecstasy, hysteria and similar morbid conditions have arisen in all ages. The question is, however, whether a somnambulism artificially produced, with unconsciousness on waking, that is, — a true hypnotism,—was known at a remote period. The author begins his study, therefore, with the sacred books of India, and then considers the magic of the Chaldees and the Hebrews, the temple-healing, and the various practices of oracles and sibyls among the Greeks and Romans, and studies with care the practice of sorcery and the magic art of the Middle Ages. He finds in the Upanishads the first record in the directions for producing states of ecstasy, but here he finds that the ecstatic preserved a complete memory of his hallucinations. The dreams of the patients in the Greek temples of healing were spontaneous, and the patients often had to wait many nights before they came; but, although the priests employed these dreams and other suggestions to influence the imagination of the patients, they never put the patients into a hypnotic state and gave them true hypnotic suggestions. In like manner, in all the trance conditions and hysterical outbursts of the Middle Ages, there is no evidence of artificially-produced sleep, and no record of somnambulic states with oblivion on waking. "There were certainly hypnotizable individuals, who perhaps fell asleep themselves, or were put to sleep by chance; but, if there were such persons, there were no hypnotizers who knew how to provoke sleep artificially and to utilize it for various ends." In the sixteenth century various doctrines concerning animal magnetism began to arise, inaugurated by Paracelsus, and developed by Kircher, Maxwell and others. This led, finally, to the doctrines maintained by Mesmer. To Puysegur, however, we owe the discovery of artificial somnambulism, which, as is well known, was first put on a scientific basis by Braid. In the concluding chapter the writer gives a brief review of the modern scientific study of hypnotism from Braid to Charcot, and he inclines rather to the doctrines of the school of La Salpêtrière than to those of the school of Nancy. In conclusion he gives the result of his own researches on the circulation in four hypnotized patients, which shows that there is probably in the hypnotic state a condition of cerebral congestion. Such being the case, these repeated congestions and the excessive functioning to which the brain is exposed in hypnosis may lead to definite troubles of nutrition and permanent alterations in the brain. He therefore takes a definite stand against public exhibitions, and is a firm believer in the possible dangers that may arise.

The book is an interesting and careful study, and is a valuable contribution to the history of hypnotism.

The Psychic Life of Micro-Organisms: A Study in Experimental Psychology. By Alfred Binet. Translated from the French, by Thomas McCormack, with a preface by the author, written especially for the American edition. 8vo, pp. xii, 120. Chicago: The Open Court Publishing Company. 1889.

A little book representing one of the first systematic efforts to differentiate "psychic life," or "vitalism," from the harder facts of physiological chemistry. The subjects treated are of such intense interest, and at the same time of such extreme complexity, that it would hardly be possible to conceive of their being settled after one discussion; and that end has certainly not been here accomplished. Few will be found to deny that there may be found some elements of true psychic energy in the lowest organisms with which we are yet acquainted, but our knowledge is as yet so elementary that convincing arguments to that effect are exceedingly difficult to come at. There is certainly vast room for investigation in this direction, the lines for which are but just begining to be indicated. H. C. E.

The Micro Organisms of the Human Mouth: The Local and General Diseases which are Caused by Them. By Willoughby E. Miller, D. D. S., M. D., Professor at the University of Berlin. With 128 illustrations, one Chromo-Lithographic, and two Photo-Micrographic Plates. 8vo, p. xxii, 364. Philadelphia. The S. S. White Dental Mfg. Co. 1890.

The first edition of Dr. Miller's admirable work in German was published in 1889; and the book before us is a translation of the same, with certain enlargements and additions in the way of illustrations. It is the most complete of which we have any knowledge, in the special line of which it treats, and must be an invaluable aid to any one who wishes either to investigate the same subject, or to know what has been done already in this direction.

A certain amount of knowledge of the processes set up by the various forms of bacteria found in the mouth is a matter of necessity to every well-educated dental surgeon, and nowhere can this knowledge be better obtained than in the book here spoken of.

H. C. E.

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TUBERCULOSIS IN ALL ITS RELATIONS.

AT the recent International Congress in London a combined meeting was held of the Sections on Bacteriology and on the Relations of Diseases of Animals to those of Man, for the purpose of discussing tuberculosis in all its relations. The subject was opened by Prof. Burdon Sanderson, with a short address, stating concisely the questions before the meeting and his own attitude in regard to them.

He was followed by Dr. Bang of Copenhagen, Professor Arloing of Paris, M'Fadyean and Woodhead of England, Hamilton of Aberdeen, Nocard of Paris, Hime of Bradford, Barlow of London, and Perroncito of Italy.

Dr. Sanderson put the subjects for discussion before the meeting in the following manner:

"(1) Does general tuberculosis in man originate from intestinal infection? (2) If it does, is it possible to guard against so fearful a danger?

"The first of these questions is pathological, for it concerns the mode of origin of the disease itself; the other is practical, for it has to do with the use we can make of whatever pathological knowledge we may possess for the protection of the community.

"For the purpose of avoiding useless discussion on subjects on which there ought to be perfect agreement of opinion, I will ask you to accept certain fundamental propositions as settled, such as, for example, the existence of a *materies morbi* in the form of the tubercle bacillus, its constant association with the tuberculous process, and the identity of human with bovine tubercle.

"I would ask you also to allow it to be assumed that any part of the body of a tuberculous animal, or any secretion of such an animal, would, if it contained tubercle bacilli, be a source of danger, and that the use of such liquid or part ought to be prohibited or avoided. This being understood, we are in a position to enter without further introduction on the questions which require answers, some of which are pathological, or, if you prefer it, etiological, the others practical or administrative. The etiological questions relate to the three possible ways in which a human being may be infected by tubercle, namely, inheritance, pulmonary inhalation (atmospheric infection), and food (enteric infection). The practical issues are — (1) Is the risk to the individual consumer of such a nature that it can be detected and estimated? (2) Is it of such a nature that it can be counteracted? (3) Is the collective risk to which the community is exposed sufficient to demand the interference of the State? and (4) if it is, how can the State interfere with effect? I do not propose to discuss all of these questions myself, but I commend them to the attention of the Congress as questions which require discussion."

Dr. Sanderson's own views in regard to these questions, after being elaborated somewhat in detail, were finally expressed in the form of the following propositions:

"There is no sufficient reason for supposing that in the human adult the introduction of the bacilli of tubercle by enteric absorption is the efficient cause of tuberculosis. In infancy a large proportion of the apparently idiopathic tuberculous diseases of the lymphatic system are probably due to the penetration of bacilli into the organism from the intestine; but the evidence which we at present possess on this subject is not sufficiently precise or extended to serve as a basis for prophylactic action. For this reason the origin of tuberculosis in infancy is a subject which urgently requires investigation.

"It has been proved that the ingestion of any material which contains the bacilli of tubercle is a source of risk to the consumer, but the conditions which limit this risk are insufficiently known. It would therefore be unjust to enforce the destruction of any specimen of meat apparently healthy, even though it were known to be derived from a tuberculous animal, excepting on evidence given by an expert as regards the particular case that it would be infecting if administered to test animals.

"As regards the duty of the State in relation to the prevention of tuberculosis, what is immediately required is, first, that tuberculosis should be added to the list of diseases regarded by the law as contagious; and, secondly that an efficient system of skilled inspection should be created. This is desirable, not merely as a first step towards the prevention of the sale and consumption of tuberculous meat, but as an indispensable means of acquiring better information than now exists. To be of use, it must be carried out on the principles I have already set forth. It must be conducted by men of technical skill, acting under scientific guidance."

In regard to milk, he expressed the conviction that the consumption of unboiled milk during the years which follow weaning, must have its share in bringing about the fatal prevalence of tuberculous disease at that period of life, a prevalence represented by the estimate that about forty per cent. of the children who die in the hospital die tuberculous.

Of those taking part in the discussion all, except Professor Arloing, agreed essentially with Dr. Burdon Sanderson. Professor Bang concludes from careful observation and experiment in Sweden, that the seizure of all tuberculous animals is too stringent a measure; if the tuberculosis is strictly localized, the meat is not a source of danger — flesh itself not containing tubercles, although muscle-juice does occasionally contain bacilli. Where the disease is generalized, eating the meat may be dangerous, although it is not always so. The eating of uncooked meat should be discouraged, but the best means of avoiding danger to the health of man is to take all possible measures for preventing the propagation of tuberculosis amongst domestic animals.

With respect to milk, the question of prophylaxis was easily settled if it were resolved never to use it without its first being boiled. This, however, would not do for the products of milk, such as butter, cheese, cream cheese, butter-milk, etc., all of which may contain tubercle bacilli retaining their vitality for periods of from fourteen to thirty days. A separation of the cream by the centrifugal machine separates the bacilli to a large extent, but not entirely, from the milk nor

even from the cream. Bang thinks that in a certain, perhaps small, proportion of cases the milk from phthisical cows whose mammary gland is unaffected is dangerous.

Drs. M'Fadyean and Woodhead maintained that the evidence as to the transmission of tuberculosis through the flesh or milk of tuberculous animals was very conflicting, apparently in great part because the methods used were different and the conditions not uniform. Their own experiments and investigations had led them to conclude that there was great necessity for the thorough inspection of both dairy cattle and of animals slaughtered for food purposes; but the danger from milk was greater than that from meat, and only in a certain proportion (undetermined) of cattle affected with tuberculosis did there seem to be any danger from eating the flesh. There is not yet sufficient evidence on which to decide that the total seizure of meat from tuberculous animals should be resorted to.

Nocard, of Paris, took the same position, whilst also admitting that the ingestion of tuberculous material, whether in meat or in milk, was attended with much greater danger for children than for adults.

Professor Arloing, on the other hand, still adheres to the view which he enunciated at the Paris Congress of 1888. Whilst admitting that the "*diagnose précoce*" of tuberculosis in animals is very difficult, and also that *careful* cooking under public supervision would render affected milk and meat innocuous, he, nevertheless, still maintains that total confiscation of tuberculous meat is the safest method to be adopted. In the first place, however, a system of strict inspection should be instituted, not only in large towns, but also in smaller centres of population.

At the suggestion of Dr. Sanderson, in order to obtain further light upon the invasion of the system by tuberculosis, it was resolved that at the next congress the same sections should discuss the etiology of tuberculous disease of infancy and early childhood, between the ages of three months and five years.

The difficulties attending legislation for the inspection of meat are clearly and concisely put by Dr. Sanderson in his preliminary paper, and apply with at least as much force here as in England, though perhaps being less applicable to the continent of Europe. He says:

"The practical result to which we have come is this. Everything turns on diagnosis. The legislature might direct that all meat intended for consumption should be subjected to inspection, might appoint inspectors, impose penalties, and provide just and adequate compensation, but all this would be of no use unless the principles on which the discrimination of infecting from non-infecting meat is to be founded, could be laid down, and the services of skilled persons of sufficient intelligence to apply them could be secured. We may consider it quite certain that in this country, at least, it would at present be extremely difficult to find such persons. . . . Two things, in short, are required, neither of which we have at our disposal — special scientific knowledge and technical skill. In my judgment the former must be acquired first. Science must determine, much more definitely than has been done as yet, what are the earliest changes which have their seat in the parts of animals used for food, and which of these indicate danger to the consumer. This knowledge can only be acquired by experiments specially made for the purpose. Having been attained, it can only be applied by technically trained persons. I cannot better illustrate the sort of skill required than by comparing it to that possessed by the professional tea-taster as regards the commercial value of tea. I believe I am right in stating that the gustatory judgment of the tea-taster is so implicitly relied on that the largest transactions are regulated according to it. Why is the judgment of the expert reliable? It is because he is responsible for it and paid for it. It would be the same as regards the early recognition of tubercle in cattle if skill and discrimination were paid for; and the moment that this skill is required it will come into existence. What is wanted in the inspector is not that he should be a pathologist, or even a bacteriologist, but a trained expert; for although the rules unconsciously used by him may be based on scientific principles, it is not by these principles he is guided in each case, but by practical skill."

Whatever interest we allow ourselves to take in this question of inspection and confiscation of food products, we must not lose light of the fact, which was emphasized by several participants in this debate, that the majority of tuberculous infections arise from man himself; and the elimination of the possible sources of infection from man to man should, therefore, not cease to occupy our primary attention.

The article, published in this and the last issue of the JOURNAL, by Dr. Jeffries, under the title of "How is tuberculosis acquired?" will be found of especial interest in connection with this discussion at the Congress, and from it a pretty full bibliography of the subject may be obtained.

THE PRESENT ESTIMATION OF TUBERCULIN.

THE present opinion of Koch himself as to the value of tuberculin formed the basis of some remarks by Professor Ehrlich at the recent Congress of Hygiene and Demography. He followed immediately after a joint paper by Drs. Metschnikoff and Roux, on the changes that took place around the tissues of tubercle bacilli, in which they indicated the difference in the reaction of tissues to tubercle bacilli when the disease was going to run a favorable course and when the animal was going to succumb to the disease. The process of recovery consisted of concentric rings of hard and inflammatory tissue around the bacilli, which eventually led to their absorption, the inflammatory tissue itself finally undergoing a process of calcification.

It is the promotion of this process, according to Ehrlich, which must be sought for in the use of tuberculin. The original opinion, that necrosis of the tubercular tissue, and consequent discharge of the bacilli, as seen after the injection of tuberculin, was desirable, that is, curative, had been shown to be erroneous, in fact, this necrosis was distinctly harmful, and to be carefully avoided. He said that the results obtained were exceedingly favorable, and that most of those in which he had failed to obtain equally good results had failed because he had used too large doses of the tuberculin. The principle of cure rested in the local effects which tuberculin exercised on the specifically affected tissues; slight and often rapid stimuli

would give rise to cicatrization of the tuberculous centres, so that the essence of this method of treatment was to retain as long as possible the specific excitation of the tissues and not to do away with these, as was the case where large doses were used. Wherever successful results had been obtained, they had all been got by the use of repeated minute doses of tuberculin, which was only very gradually increased in strength. It should be specially noted that the pathological signs found as the result of the action of tuberculin were always produced by large doses.

The opinion expressed by others present, on the value of tuberculin, did not seem to be as hopeful as Ehrlich's. Professor Cornil and Drs. Bardach and Ponfick were agreed that tuberculin was a heroic and dangerous remedy, about which we as yet knew little, and which was therefore still in the experimental stage. It also seemed to be the general opinion that there was danger of setting up generalization of a tuberculosis that had hitherto been localized. As the results of his own experiments, Dr. Hunter had succeeded in isolating principles quite different from those mentioned by Koch. They were three: Those which produced fever but set up no local reaction; those which gave a local reaction, but no fever, and those which set up neither fever nor local reaction, but which had a distinct remedial effect.

In summing up, Sir Joseph Lister hoped that in time we should all be able to obtain the wonderfully satisfactory results that had been described by Professor Ehrlich on Dr. Koch's behalf.

MEDICAL NOTES.

TYPHOID FEVER IN NEWARK. — A serious outbreak of typhoid fever is reported from Newark, N. J. Both aqueduct and well-water is used for drinking purposes, and there appears to be much difference of opinion as to which is mostly at fault. The lowest sewers of Passaic empty into the Passaic River only four miles above the spot where the Newark water mains are supplied.

HEALTH PUBLICATIONS IN FRENCH. — The Maine State Board of Health has printed a French edition of its circulars on diphtheria and scarlet fever, for the benefit of the residents of the State who read French more easily than they do English.

INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY. — The permanent International Committee has appointed the following International Subcommittee to prepare a scheme for the organization of future Congresses: Professor Brouardel, (France), Professor Dr. Fódór, (Hungary), and Professor Corfield (England), to represent Hygiene; and M. Körösi (Hungary) and Dr. Janssens (Belgium), to represent Demography.

THE NEW INSTITUTE FOR INFECTIOUS DISEASES, at Berlin, was formally opened on Monday, August 17th, in the presence of Professor Koch and his assistants. The first six patients, all suffering from disease of the lungs, were admitted the same evening. The head of the clinical department is Professor Brieger; that of the scientific department the well-known hygienist, Dr. Pfeiffer. Drs. Petruschky, Frosch, and Behring are among the assistants. The attendants in the clinical department are "Maerkische Schwestern" (Brandenburg Sisters), who devote themselves solely to the care of the sick without any special religious bias.

SYSTEMATIC BEGGING. — The business of begging is better organized in Paris than in American cities, says the *Popular Science Monthly*. A large association exists there, calling itself the Paris Syndicate of Professional Mendicants. The managing committee assign posts to its members, protects them from competition, collects their receipts once or twice a day, and pays each one his proportion of the general profits once a week. The proper income of each post is accurately known, and any "embezzlement" is quickly detected and punished. A certain percentage of the receipts is retained for the general expenses of the syndicate and for a reserve fund. A lodging-house has been bought with this fund, and the remainder is invested in shares and bonds. There is no sick or burial fund — the sick are best able to excite charity, and when they become actually disabled there are the free hospitals; while the funerals of the poor are paid for by the State. Why should the professional mendicants waste their money on these things, when the tax-payers will provide them? The alleys in the Champs-Elysées are good posts for picturesque-looking old men. On a good day such should collect from thirty to forty francs each — six to eight dollars. One veteran used to get as his share of the division over seventeen dollars a week. He has now retired. The better class of mendicants look forward to saving enough to buy a cottage in the country, and living thereafter on an annuity, while the good-for-nothings spend their income in sottish debauchery. The Municipal Council, after an investigation, recently decided to tolerate the existence of the syndicate.

BOSTON AND NEW ENGLAND.

DR. O. W. HOLMES celebrated his eighty-third birthday on Saturday last. During the summer, we are glad to know, Dr. Holmes has been in remarkably good health and spirits.

THE DEATH OF DR. G. H. LYMAN. — The immediate cause of the death of Dr. George H. Lyman, which occurred in London on the 19th ult., as reported in our last issue, was, we understand, from an attack of facial erysipelas, of which he had had a previous attack in this country some years ago. He was just seventy-two years of age.

A NEW HOSPITAL ON LONG ISLAND. — The City architect has completed plans for a new cottage hospital on Long Island, Boston Harbor. The administra-

tive building will have an area of 44 by 47 feet and a height of probably three stories. It will contain the hospital offices, nurses' and matron's rooms, and the usual conveniences of the administrative department of a hospital. The ward building will connect with the main building by a corridor. This building will extend 140 feet in a north and south direction. The plans provide for the addition of two more long wards whenever occasion requires them. The present expenditures will be in the neighborhood of $50,000. The hospital is for women, and at the size contemplated by the present appropriations, will accommodate about one hundred patients.

Measles at Quarantine. — The British steamer *Kansas*, of the Warren line, arrived at Boston last week with two hundred steerage passengers. During the voyage there were five cases of measles on board, but all had recovered at the time of the steamer's arrival. As a precaution against further outbreak fourteen passengers were sent to quarantine, at Gallop's Island.

Marlborough Hospital. — The trustees of the Marlborough Hospital have purchased a building for $5,000, and will commence at once to remodel it for a temporary hospital.

Miscellany.

OBSTETRICAL SOCIETY OF BOSTON. RESOLUTIONS ON THE DEATH OF DR. GEORGE H. LYMAN.

CHARLES W. TOWNSEND, M.D., SECRETARY.

At a Special Meeting held August 28, 1891, in commemoration of Dr. G. H. Lyman, the following resolutions were adopted:

The members of the Society desire to place on record their sense of the loss occasioned by the death of their late associate, Dr. G. H. Lyman. As our former president he was faithful in his efforts for its welfare and advancement. As a member, his contributions to its proceedings added much to the interest and value of our meetings. His interesting and valuable historical sketch of its members in the War of the Rebellion is a faithful record of the services of those of us who were privileged to aid, in field or hospital, in the great struggle for the preservation of the Union and the extinction of slavery in our land.

The Society respectfully offers to the family of Dr. Lyman its sympathy in the bereavement they have sustained by his death.

(Signed) F. Minot, S. L. Abbot, C. W. Townsend, } *Committee.*

Remarks were made by Drs. Minot, J. Stedman and J. G. Blake, on the life and character of the deceased, and a letter on the same subject from Dr. C. E. Stedman was read.

THE MEDICAL BUREAU OF THE COLUMBIAN EXPOSITION.

This very necessary adjunct to the great fair was organized June 1, 1891. Staff: Jno. E. Owens, M.D., Medical Director; W. H. Allport, N. R. Yeager, S. C. Plummer, Assistant Surgeons.

The Bureau took charge of medical, surgical, and sanitary inspection work on the grounds July 1, 1891, and is now in active operation.

A temporary dispensary and emergency hospital has been constructed, where medical and surgical attendance and medicines are furnished to employes during the day free of charge.

The Bureau is amply equipped with instruments, medicines, operating-room furniture, stretchers, cots, and an orderly. The City Police Department has furnished a patrol wagon for ambulance service to be used until a permanent ambulance has been constructed, and the Exposition Company provides horses, harness and driver.

The present Bureau operating during the construction period will be the nucleus of the medical service of the World's Fair. It is the intention of the Medical Director to make the records of the Bureau as complete as possible from a statistical and historical standpoint, and to furnish at the close of the service a report which will be valuable in the organizations of the Medical Bureaus of future Expositions.

Present number of persons living or working on the grounds is 2,000, increasing weekly. Several accidents have already occurred, and the Bureau has had ample opportunity to demonstrate its right to existence.

THE SENSE OF TASTE IN THE LARYNX.[1]

For many years it has been known to histologists that the specific end-organs of taste, namely, the taste-bulbs, occur on the posterior or inner surface of the epiglottis, but up till now the physiological proof of the existence of the sense of taste in the epiglottis has not been forthcoming. Michelson[2] under Langendorff's direction, made a number of experiments, which show that the inner surface of the epiglottis is endowed with taste. A Schroetter's laryngeal sound tipped with a solution of quinine or saccharin, was introduced into the larynx, and the drop of the sapid substance was cautiously brought into contact with the inner surface of the epiglottis. Positive results were obtained, which were controlled by the sensation — electrical taste — known to be produced by electrical stimulation. It seems, therefore, proved that a part of the nerve fibres passing to the larynx are nerves of taste.

THE USE OF THE FLESH OF POISONED ANIMALS.

This subject has been studied by Schmidt-Mülheim with a view to determine whether if eaten by men such flesh would be injurious.[3] As reported in the *Revista Internazionale d'Igiene*, of Naples, for June, 1891, it may be used without any danger whatever. Many savage races constantly use the flesh of the animals that have been killed with poisoned weapons, and have never been injured by that means.

Harms has proved that the flesh of animals that have been poisoned with nux vomica and with tartar-

[1] British Medical Journal, August 8th.
[2] Virchow's Archiv. iii, 3, 1891.
[3] Sanitarian, August.

ized antimony is not at all hurtful; Feser has demonstrated the same fact in regard to strychnine and eserine; Spallanzani, Zappi, and Sonnenschein have done the same for arsenic.

Froehner and Knudson have made some experiments for this purpose with strychnine and with eserine. They fed dogs with large quantities of mutton poisoned with strychnine and eserine, and they found that no injury whatever was done to the animals. Besides, they themselves eat some of the poisoned meat and drank soup made from it, and found that the flavor was good and had no injurious effects whatever on the system.

In regard to the alleged injurious effects caused by the meat of animals poisoned with hellebore, and which had eaten belladonna leaves, the authors have shown that the accounts published in this regard have not been proved and require further tests.

The *Revista* says that in the interest of meat inspection, it is desirable that experiments should be made with other poisons.

Correspondence.

DR. ANDREW D. WHITE'S WARFARE OF SCIENCE.

NAHANT, August 28, 1891.

MR. EDITOR: — Though I might regard the great bitterness of Dr. White's reply to my criticisms as to some extent a tribute to their justice, I am sorry that the discussion should have become such a personal one. I regret it the more because the fault in this respect was chiefly mine. My purpose is now to review very briefly the main points of the discussion, and see to what extent I have proved my charges of great inaccuracy.

First, as to the School of Salerno. It is some twelve years since I looked up the matter, and I was not acquainted with the more recent studies which have since appeared. It seems that I was wrong to ascribe its foundation to the Benedictines; for the truth is that next to nothing is known certainly of its origin. This being so, I would ask, Why did President White state that its creation is largely due to Jewish scholars?[1] I must beg leave to point out that I said that his statement that this school was held in aversion by multitudes of strict churchmen, was unlikely but not impossible. I did not say it was a gross misrepresentation, as in his reply he says I did.

Next, as to the decree of the Fourth Council of the Lateran, Dr. White made the statement that physicians were forbidden to undertake medical treatment without calling in ecclesiastical advice, under pain of excommunication. I pointed out that they were commanded merely to advise the patient to call in a confessor. To my astonishment, in his reply Dr. White reiterates the charge that the latter was called to treat the body, and talks of "pastoral medicine," "the little wax *Agnus Dei*," "St. Remy's ring," etc. To show that all this is quite imaginary I must summarize the essential parts of the decree. It states that as bodily infirmity sometimes arises from sin (in which by the way I can see no inherent absurdity) physicians of the body should, first of all, warn and induce their patients to call the physicians of the soul, "so that after provision has been made for the sick man's spiritual welfare, there may more wholesomely follow the remedy of bodily medicine, since when the cause ceases the effect ceases." Now, be it noticed that one is called the physician of bodies and the other the physician of souls, and that there is not a word in support of Dr. White's statement that the priest was to do anything for the good of the patient except to administer the sacrament. There is not a shadow of evidence that he was to use what Dr. White so politely calls fetiches. But to return to the decree. It continues that one reason for its passage is that sometimes patients, when advised to attend to their souls, fall into despair, and thus run greater danger of dying. It is clear that if this advice is always given the patient will not be alarmed by it. I think I am quite justified in saying that Dr. White gave a false impression. As to the penalty, he admits that I am partly right, but not wholly, because he says that prohibition to enter a church is not a very different thing from excommunication, but rather the first step towards it if the offender does not repent. I would reply that in those days excommunication was a terrible penalty, the other perhaps the mildest ecclesiastical censure. It is not canon law that one led necessarily to the other, even if there were no reform. I do not deny that it must have been unpleasant: but there was no reason for incurring the penalty. I may add, moreover, that though the offender made himself liable to this penalty, it does not appear that it was incurred *ipso facto*.

Now as to the prohibition to advise anything for the good of the body that might be injurious to the soul, I consider it most salutary. That even saints and theologians held views which now strike us as peculiar, is quite irrelevant. The order is not to do what is sinful for health. Dr. White's reference to the *Corpus Juris* is so inadequate that I have not been able to verify his quotation from St. Gregory. It makes little difference; for even a saint and a pope writing on matters of faith and morals is not infallible unless he makes the declaration *ex cathedrâ*. Dr. White's implication is on a par with his statement made elsewhere in these papers that another pope "ordered the world under pain of damnation" to believe the miracles of St. Francis Xavier.

We shall consider together the alleged prohibition of dissection and the case of Vesalius. Dr. White wrote that Boniface VIII interdicted dissection as sacrilege. This is both a serious and a definite charge. I have shown that he forbade only the eviscerating and boiling the dead that their bones might be brought home. Dr. White is kind enough to say "that in a small, technical way," I am correct, but that the decree really was directed against dissections, though it did not say so. He asks me what I suppose Boniface's motives to be. If he will turn to the document he will find that it is tacitly implied that the custom was common among nobles and prominent people. It was not a decent way of treating the body; it shocked people. Does any one doubt that it would shock people now? The decree goes on to direct that the bodies are to be left where they are till they be reduced to dust, and that then they be transported. The penalty seems excessive to me as well as to my adversary, but I presume the Pope knew better than we what penalty was necessary to break up the custom. The argument that because this forbade a method of moving bodies, by so much the more it forbids dissection, is ingenious but nothing else. Why, in the name of common sense, if the Pope wanted to forbid dissection, did he not say so? What was there to deter him? If it were true that all authorities of note have held that this view was levelled at all dissections, it only would show how loosely history is written.

President White, however, has cited a high authority, which he appears to have since forgotten. The following passage is from his own paper concerning Vesalius's career: "A conference of divines having been asked to decide whether dissection of the human body is sacrilege, gave a decision in the negative. The reason was simple. The great emperor, Charles V, had made Vesalius his physician, and could not spare him.[2]" This is a typical example of Dr. White's historical methods. To support his theory, he says, in effect, that this council of divines gave a false decision to please the emperor, — a charmingly simple explanation. I wonder if it has yet occurred to him that it is just possible that the council reported as it did because it was true. It is very hard to reconcile such

[1] Popular Science Monthly, May, 1891, p. 17. Dr. Payne writes of the School (not when discussing its foundation), "The Jewish element appears to have been important among the students, and possibly among the professors."

[2] Popular Science Monthly, June, 1891, p. 156.

a passage as the one just quoted with the author's boast that he has never warped history.

I must admit that there is weight in Dr. White's argument that a man offensive to Rome might therefore be honored by Venice. Unfortunately, I am not enough of an historian to decide just how much weight it has in this particular case. Whatever Vesalius's troubles may have been, dissection, pure and simple, was not their cause.

I do not remember that Fallopius, his successor, was ever disturbed. True, he was at Padua; but Eustachius, one of the most renowned dissectors of the day, was professor at Rome itself. Finally, to come to the cause of the journey to Jerusalem, which cost Vesalius his life, I find that Hæser, whom I had not consulted for years, till after Dr. White's reply, treats the stories of ecclesiastical persecution as fables. Is it too much to ask that Dr. White should give us the definite statement of some unimpeachable authority in support of his views?

Yours truly,

THOMAS DWIGHT, M.D.

UNEQUAL PUPILS.

UNALASKA, ALASKA, August 4, 1891.

MR. EDITOR: — The subjoined instance recently came within my observation. It is presented in the hope that wider experience may explain what seems anomalous.

The patient is a robust man, aged thirty years. The history of the case does not give any certain cause, though he had severe headaches when about six years old. The condition was first noticed near twelve years of age. The eyes are both hazel in color. The right pupil is habitually twice the size of the left. Vision in the right eye is somewhat less clearly defined than in the left during the day or in the light. Vision in the left eye is a trifle less clearly defined than in the right during the night or in the dark. Otherwise, visual power is good in both eyes. No astigmatism. Pupils react to eserine, atropine, light and darkness.

Very truly yours,

F. B. STEPHENSON, *Surgeon, U. S. N.*

PLEURITIC EFFUSIONS.

FREDERICTON, NEW BRUNSWICK, August 27, 1891.

MR. EDITOR: — In reading your valuable Journal of the issue of August 20th, my attention was directed to an article on Acute Pleurisy, by Dr. Perry, of Jamaica Plain, in which, in the closing sentence, he speaks of the amount of effusion removed at one aspiration (129 fluid ounces) as the largest within the experience of several gentlemen.

On August 20th, there called at my office for the first time, a young man, apparently twenty-five years of age, five feet ten inches in height, about 140 pounds weight, slender in build, anæmic and short of breath, who told me that he had had an attack of pleurisy about ten months ago. His physician removed a small quantity of serous fluid at that time, and a few months later, in the Massachusetts Hospital, Dr. Shattuck removed about one pint.

On examination, found whole right chest, front and back, completely flat from base to apex of lung. No respiratory sounds. The heart apex was displaced to the left about two and one-half inches. On measurement, there was but little difference between right and left chests on the mammary line, but lower down, right chest was one and one-half inches larger.

On the 22d, with Codman & Shurtleff's aspirator, removed fourteen pints (wine measure) of pus. This would mean 224 fluid ounces. The fluid was emptied into the pint measure as the bottle filled, and, a tally being kept by myself, the result showed the number of pints above mentioned.

The patient, who had remarkable pluck, exhibited somewhat alarming symptoms toward the close of the aspiration, becoming more pallid, with small flickering pulse and great pain in expanding lung. Hypodermic morphia (one-third of a grain) was given, with good effect.

He drove five miles on the 24th, two days later, to see me at my office.

No doubt a permanent drainage-opening will be required before very long.

Yours sincerely,

G. E. COULTHARD, M.D. (Harv.).

METEOROLOGICAL RECORD,

For the week ending August 22, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity*			Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...16	3.007	64	68	59	94	80	87	N.	S.E.	10	7	O.	O.	†
M..17	30.03	71	81	62	62	71	72	N.W.	S.	8	7	C.	C.	
T..18	29.92	74	82	66	66	79	77	S.W.	S.W.	12	7	F.	O.	
W.19	29.98	67	70	64	64	82	80	N.E.	E.	12	7	C.	F.	
T..20	30.00	73	81	64	64	77	79	S.W.	S.W.	9	22	C.	C.	
F..21	29.80	74	81	67	67	84	80	S.	S.W.	22	18	F.	F.	
S..22	29.83	79	86	72	72	83	88	S.	S.W.	14	8	O.	C.	.53
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 22, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	773	319	27.56	11.57	17.94	2.08	3.51
Chicago	1,099,850	537	270	38.19	7.03	23.37	7.79	4.37
Philadelphia	1,046,964	—	—	—	—	—	—	—
Brooklyn	806,343	353	193	27.16	10.16	18.20	1.40	3.92
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	226	104	24 20	12.32	21.56	.44	1.32
Baltimore	434,439	193	86	26.46	10.26	19.44	.54	2.16
Cincinnati	296,908	93	43	24.48	7.14	12.24	4.08	6.12
Cleveland	262,000	118	55	39.10	—	27.20	4.25	1.70
New Orleans	242,039	136	37	18.50	10.36	8.88	—	1.48
Pittsburg	240,000	—	—	—	—	—	—	—
Milwaukee	240,000	94	61	45.58	6.36	32.86	3.18	7.21
Washington	230,392	—	—	—	—	—	—	—
Nashville	76,168	41	10	26.84	14.64	14.64	7.32	2.44
Charleston	65,163	—	—	—	—	—	—	—
Portland	36,425	7	4	14.28	—	14.28	—	—
Worcester	84,655	26	12	30.80	15.40	15.40	—	3.85
Lowell	77,696	38	24	26.31	2.63	23.67	—	—
Fall River	74,398	—	—	—	—	—	—	—
Cambridge	70,028	28	11	33.30	29.60	33.30	—	—
Lynn	55,727	23	15	73.95	4.35	56.55	4.35	4.35
Lawrence	44,654	23	12	47.85	—	35.80	—	—
Springfield	44,179	12	2	8.33	33.33	8.33	—	—
New Bedford	40,733	29	15	34.48	10.35	30.65	—	—
Salem	36,801	14	10	35.70	—	35.70	—	—
Chelsea	27,909	9	4	22.22	22.22	22.22	—	—
Haverhill	27,412	12	6	41.65	—	33.33	8.33	—
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	—	—	—	—	—	—	—
Gloucester	24,651	4	1	—	25.00	—	—	—
Newton	24,379	7	4	28.56	14.28	28.56	—	—
Malden	23,031	12	8	25.00	—	16.66	8.33	—
Fitchburg	22,037	19	12	52.63	—	42.14	—	—
Waltham	18,707	2	1	—	—	—	—	—
Pittsfield	17,281	6	3	33.33	—	33.33	—	—
Quincy	16,723	6	3	33.33	—	33.33	—	—
Medford	11,079	4	2	25.00	25.00	—	25.00	—
Clinton	10,424	—	—	—	—	—	—	—
Hyde Park	10,193	—	—	—	—	—	—	—
Peabody	10,158	2	—	—	—	—	—	—

Deaths reported 2,852: under five years of age 1,327; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 860, consumption 288, acute lung diseases 133, diarrhœal diseases

586, diphtheria and croup 92, typhoid fever 84, scarlet fever 27, whooping-cough 20, malarial fever 20, cerebro-spinal meningitis 16, erysipelas 6.

From scarlet fever New York 10, Chicago 6, Cleveland 4, Brooklyn 3, Cincinnati 2, Baltimore and Lawrence 1 each. From whooping-cough New York 9, Baltimore 3, Brooklyn and Boston 2 each, Chicago, New Orleans, Cleveland and Milwaukee 1 each. From malarial fever New York and Brooklyn 5 each, New Orleans 9, Baltimore 1. From cerebro-spinal meningitis Chicago and Worcester 3 each, Brooklyn, Baltimore and Lynn 2 each, New York, Cleveland, Lowell and New Bedford 1 each. From measles New York 5, Chicago 3, Brooklyn 1. From erysipelas New York, Chicago, New Orleans, Cleveland, Milwaukee and Nashville 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending August 15th, the death-rate was 18.8. Deaths reported 3,385: acute diseases of the respiratory organs (London) 185, diarrhœa 382, whooping-cough 96, measles 39, diphtheria 34, fever 26, scarlet fever 24.

The death-rates ranged from 12.1 in Derby to 28.5 in Portsmouth, Birmingham 14.9, Bradford 16 6, Hull 15.3, Leeds 21.0, Leicester 18.3, Liverpool 21.1, London 20.1, Manchester 19 4, Nottingham 14.2, Sheffield 16.2, Sunderland 24.2, Wolverhampton 18.9.

In Edinburgh 14.4, Glasgow 20.0, Dublin 22.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 22, 1891, TO AUGUST 28, 1891.

Major VALERY HAVARD, surgeon U. S. Army, granted three months' leave of absence, to take effect on or about September 5, 1891.

Captain M. C. WYETH, assistant surgeon U. S. Army, sick leave of absence, extended three months on surgeon's certificate of disability.

Captain JAMES E. PILCHER, assistant surgeon U. S. Army, is relieved from duty at Fort Clark, Texas, on expiration of leave absence, and is assigned to duty at Fort Ringgold, Texas.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING AUGUST 29, 1891.

F. A. HESLER, passed assistant surgeon, detached from U. S. S. "Pensacola" and to the "Charleston."

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

SECOND TRIENNIAL SESSION.

The Congress meets in Washington, D. C , September 22d to 25th, inclusive. It is composed of the members of the National Medical Societies, and of foreign guests specially invited by the Executive Committee. To enable a physician residing in the United States to become a member of the Congress, with the right to participate in its proceedings, it is necessary that he be a member of one of the Constituent National Societies. A physician may be accredited as a visitor to the Congress by any one of the Constituent Societies. The certificate of the Secretary of one of these Societies to the effect that he is thus accredited will enable him to register upon payment of the registration fee, which registration will entitle him to a card of admission to the President's reception and to a copy of the Transactions of the Congress, but not to take part in the deliberations of the Congress.

All physicians are invited to attend the meetings of the Congress and the public meetings of the Societies, but only those may register who are members, specially-invited guests, or visitors accredited through the Secretaries of Constituent Societies.

The registration office will be in parlors 1 and 2 of the Arlington Hotel. From this office the mail of members and invited guests will be distributed, and here the city address of each member, guest, and accredited visitor can be ascertained. All members, invited guests, and accredited visitors should register as soon as possible.

A registration fee of five dollars will be required of all members and accredited visitors. Invited foreign guests will register, but will pay no registration fee. A copy of the published Transactions of the Congress will be sent to all members, and to each invited guest and accredited visitor who registered. Only those who register, and the ladies accompanying them, will be admitted to the reception of the President of the Congress. It is recommended that members effect registration in advance of the meeting by filling out the blank certificates of registration which will be sent to each member about September 10th, and forwarding these certificates, with the requisite fee, to Dr. John S. Billings, Treasurer of the Congress.

The sessions of the Congress will be held from 3 to 6 P. M., daily, in the main hall of the Grand Army Building, 1412 and 1414 Pennsylvania Avenue.

The President of the Congress, Dr. S. Weir Mitchell, of Philadelphia, will deliver an address Wednesday evening, September 23d, at 8 P. M., "On the History of Instrumental Precision in Medicine."

Members of the American Surgical Association and of the Association of American Physicians will conjointly entertain their foreign guests at a dinner at the Arlington Hotel, Thursday, September 24th, at 8 P. M.

Other Societies will give dinners as follows: Thursday evening, Gynecological, Orthopedic, Laryngological, Pediatric, Neurological. Tuesday, Dermatological and Andrology and Syphilology. Date not yet decided, Climatological.

For particulars of reduced railroad fares see page 201 of the JOURNAL of August 20th.

As other societies will meet in this city during the Congress week, it will be prudent for members and visitors to secure hotel accommodation in advance. The Arlington Hotel offers accommodations at the rate of four dollars per day, and the Hotel Arno at three and four dollars a day on the American plan, or one dollar a day per room only, on the European plan.

The Committee will take pleasure in answering any inquiry relating to the local arrangements of the Congress.

Officers of the Congress. — President, S. Weir Mitchell, M.D. Vice-Presidents, ex-officio, Presidents of Constituent Societies. Chairman of Executive Committee, William Pepper, M.D., Philadelphia, Pa.; Treasurer, John S. Billings, M.D., Washington, D. C.; Secretary, William H. Carmalt, M.D., New Haven, Conn.; Samuel C. Busey, M.D., Chairman, Committee of Arrangements, 1545 I Street, N. W., Washington, D. C.

DEATHS.

ROBERT T. GODFREY, M.D., of Montreal, died August 23d, aged 73.

THOMAS PRATT, M.D., died August 29th, at the University Hospital, in London. Dr. Pratt, twenty years ago, was one of the most distinguished American physicians in Europe. He was the son-in-law of Dr. Marion Sims. He served in the Confederate army as surgeon during the Civil War, and on the German side in the Franco-Prussian War. After the German victory he lived in Paris, and fifteen years ago went to London, where he has since resided. During recent years he has been an invalid.

ABRAM DUBOIS, M.D., died in New York, August 29th, aged 81 years. He was born at Red Hook, Duchess County, N. Y. In 1843 he was appointed assistant surgeon of the New York Eye and Ear Infirmary. He held in this institution successively the places of surgeon, consulting surgeon, secretary of trustees and vice-president, during forty-eight years of service. He held at the time of his death several offices: among them that of consulting surgeon to the New York Institution for the Blind, consulting physician to the Northern Dispensary and to the Home for Incurables. He was also a member of numerous charitable associations in New York. He was for many years medical director of the Manhattan Life Insurance Company.

BOOKS AND PAMPHLETS RECEIVED.

Hypnotism. By J. T. Eskridge, M.D., Denver, Col. Reprint. 1891.

Status Elipticus. By G. R. Trowbridge, A.M , M.D., and C. B. Mayberry, A.M , M.D. Reprint. 1891.

A Page of Medical History: Molière and the Doctors. By W. J. Conklin, M.A., M.D., Dayton, O., Reprint. 1891.

The Medical Register for New England. By Francis H. Brown, A.M., M.D. Boston: Damrell & Upham. 1891.

Bibliographie der klinischen Helminthologie. Heft 2, Cysticercus cellulosæ, Rud. Von Medicinalrat, Dr. J. Ch. Huber. München: J. F. Lehmann. 1891.

Letter on Ship Sanitation. Addressed to the Members of the Special Commission on Immigration into the United States. By C. H. Leet, F.R.C.S. Liverpool. 1891.

Mental Suggestion. By Dr. J. Ochorowicz, Professor of Psychology in the University of Lemberg Translated from the French by J. Fitzgerald, M.A. In four parts. New York: The Humboldt Publishing Co. 1891.

Minor Surgery and Bandaging, including the Treatment of Fractures and Dislocations, Tracheotomy, Intubation of the Larynx, Ligations of Arteries and Amputations. By Henry R. Wharton, M.D., Demonstrator of Surgery in the University of Pennsylvania. Illustrated. Philadelphia: Lea Brothers & Co. 1891.

Address.

COMMON SENSE IN MEDICINE.[1]

BY S. C. GORDON, M.D., PORTLAND, ME.

(Concluded from No. 10, page 236.)

In a paper read before the American Medical Association at the last meeting, by Dr. McKee, of Cincinnati, he makes the following statement: "The vast majority of medical students, in America, graduate without ever having witnessed a case of labor. Until within the last three or four years, the majority probably equalled ninety-nine per cent." In surgery, of course, it is equally bad. Rarely is it given to a student to try his "prentice hand" upon the living human being until he begins the race of professional life for himself. Too many, by far, have never even seen enough to become familiar with the ordinary instruments. Surgery is largely mechanical,— an art, to be acquired only by manual labor, so to speak. You may fill a man full of the theory of surgery, and unless he has seen the actual work, or tried with his own hands, the art of surgery will remain a lost art, so far as he is concerned. To begin to be a surgeon one must first learn by ocular inspection the difference between normal and abnormal structures, normal and abnormal organs. To be able to decide what nature can do, and what ordinary therapeutics can do, and, what is of equal importance, what they cannot do, is essential to a correct diagnosis and prognosis. A celebrated surgeon once said that a surgical operation was a confession of failure to cure. To decide promptly and execute without unnecessary delay, marks the brilliant surgeon.

All this must come through clinical experience. To execute skilfully, early in professional life, implies long experience in the use of instruments either by dissections or operations upon the cadaver. A familiarity with ordinary mechanic's tools, which may be acquired in boyhood and early manhood, is a good preparation for the use of surgical instruments. One of the most skilful operators in this country served his apprenticeship as a machinist.

I think every one who has seen Dr. Tait operate will readily admit that he is *facile princeps* in his skill and celerity. The manual dexterity he evinces is simply something miraculous. Of his own methods of learning the surgical "craft," he says, "I served my time at the lathe, the bench and the forge." He further says, "Upon one point we are coming to an agreement, and that is a demand for a restoration of the apprentice system. While the student is attending to this most important part of his training, he ought at the same time — and I am now speaking for those who have to follow the craft of surgery — to be taught how to use his hands. I should set him so many hours in the week into the shop of the village carpenter, and I should have him trained to use a saw, a chisel, a plane and a skew, so that he should be able to make a long splint, if need be, as well as to put it on. And into the blacksmith shop he should go until he is able to strike properly with a hammer." He thinks "a training in practical mechanics as necessary for a man who is to operate upon his fellow human beings, as is a training in anatomy." All of this is the veriest common sense in comparison with the majority of medical teaching, the veriest *uncommon* sense.

While the fundamental principles of the science of medicine and surgery are and can be taught from books, to a certain extent, yet I repeat that which I said many years ago, in a report to this association, "that no man can afford to study medicine now, unless he makes clinical instruction the important part of such study, and as counsellors of the student we are bound to impress this upon him accordingly. To my mind it is the key-note to modern medical education. 'Things and not words' (which are only the representations of things) convey most lasting impression. sWe must see the patient with our own eyes, hear with our own ears, and touch with our own fingers. Knowledge gained in this way ever remains, while the acquisition does not in the least interfere with the necessary study of books."

With a proper medical education comes the more practical question, "What are the essential elements of success in practice?" First and most important, I should say, is a capacity for work, and a willingness to do it,— work for work's sake, for the love of it, regardless of the immediate recompense. Unless the young man just entering the profession is willing, at all times and under all circumstances, to do any and every kind of professional work that may come to hand, he can never expect, neither has he any right to expect, success. Any case, however simple, or however poor or humble the patient, develops something, either in experience or another case. The former is most needed at this period in one's career. The young man who shows this willingness to work, for work's sake, is not usually long without something to do, neither is he long before he knows how to do it. The older men in the profession are soon to find out who are the drones among the young men; and it is an extremely simple question, who are the men to call upon whenever duties are to be delegated, or whenever advice is sought in reference to such young men. I have never had any sympathy for, or patience with, the young professional man who fails to improve any and every opportunity to acquaint himself with the every-day work of his life, simply because he could not see an immediate pecuniary recompense.

The clinical advantages of a hospital so situated as to be accessible daily, should be eagerly sought and duly appreciated as a valuable aid to success, especially in the matter of familiarity with surgical diagnosis and technique. I fear young men too often neglect even such obvious means of instruction. In European medical centres we find every hospital appointment, however humble, filled by the young and rising men in the profession; years of work are readily given before any position of importance can be obtained; vacancies are always filled from the willing workers. While "kissing goes by favor," to some extent, in our country, it is getting to be more and more a matter of merit every year.

I am aware that one's personality counts for much towards a true success. Each man must work out for himself the problem, and must, therefore, in all the relations of life, maintain an individuality which shall preserve him from losing his honest convictions. In a republic like ours each man has a personal interest in all that relates to the affairs of the nation, and, as a citizen, should exercise all his political rights in a free and independent manner. While the physician can-

[1] Annual oration delivered before the Maine Medical Association, June 10, 1891.

not of necessity mingle in the details of political strife, he should have intelligent convictions on all political questions, and be ever ready to maintain and defend them, and identify himself fully and heartily with the political party that is in harmony with his convictions, whether it be Democratic or Republican. All honest men respect honest difference of opinion on politics or religion; all honest people equally despise hypocrites in either. These are sacred, individual rights, and no true man can afford to sacrifice either of them for any temporary expediency. While they are entirely independent of professional education and practice, yet one's professional work is more or less influenced by habits of thought and action on other matters. Clear, definite views on secular matters can come only from logical reasoning on the facts presented; and just as we examine these subjects, will we, to a great extent, examine medical subjects. I should fear that the doctor who never gave an unqualified opinion on any of the important questions of the day, would become doubtful on any and all professional questions. I would say, therefore, to all young men in the profession, Give no uncertain sound on questions of a character which concerns you as an individual or the interests of the country or community in which you live. Act intelligently, but act — promptly if necessary, but act.

> "To thine own self be true . . .
> Then canst thou not be false to any man."

The field of medicine is by no means fully cultivated, and there is abundant room for new workers. A man must ever keep his mind free for new truths; and in order to do this, he must do his own thinking, without blindly following any man or theory which seems at plain variance with common sense. Medical literature is full of fashions and fads which had their day, and were relegated to the rubbish heaps as "back numbers." A glance at a few of them may not be without profit at this time. Among the text books of my early professional study the antiphlogistic system of treating inflammation had the prominent place. My childhood recollections are full of instances of excessive bloodletting by venesection, active cathartics, alterative doses of calomel and antimony, *ad nauseam*, etc. My early professional life was the reaction from this, so that it required undaunted courage to open a vein. I am sure we carried the reform too far — the pendulum swung to the opposite extreme. In my opinion bloodletting is one of our most valuable remedies when judiciously used, even by venesection, while cups and leeches have ever held a prominent place in my own practice. In all local, circumscribed inflammation, nothing can take the place of them. I have never regretted bloodletting, either by general or local means, but have often regretted I had not bled more.

Mr. Tait has revolutionized the medical world by salines in peritonitis. All this appeals to our common sense, and all now wonder how we could have been bound down by the opium splint of Alonzo Clark so long. I feel sure we have not yet seen the full benefit of this mode of treatment. I have been satisfied for two years that peritonitis arising from the cœcum and appendix should be treated heroically by salines, without regard to the cause. The *condition* is what immediately demands our attention. The cause has done all the harm it can, when we are first called. A free depletion will relieve the congested and inflamed vessels, preventing, in a majority of cases, suppuration and gangrene, thus allowing the case to terminate by resolution. If abscess result, then operate, and drain with the least possible disturbance to the tissues. If the appendix can be reached, remove it; otherwise leave it. I feel that the theory of early operative interference is untenable, provided we follow the saline plan. It is the plainest common sense, to my mind.

I am well aware that precedents weigh much with the ordinary practitioner; and the young man feels bound to keep in line with what he is taught. He feels, at least, that he must have given all the remedies that are advised, otherwise he cannot stand well with the consultant. Could I impress upon the young practitioner one thing more than another, it is this: never give medicine unless you are fully convinced that you can give a reason for it. I mean this to be the general *principle* of action. Do not cheat yourself by any delusion that the patient must have medicine or he will think you are doing nothing. Once you have established a reputation for prescribing only when needed, and you have a lasting hold upon the people who are worth having. It may require a little longer, but it is time well spent. Trust Nature when she is doing well. My admission to the homœopathic system of medicine is that in nine cases out of ten of acute disease the patient will recover by natural processes if we nurse and nourish well, without a drop or grain of drugs. Within a few years I have seen a case of typhoid fever where the attending physician had eleven different drugs in the sick-room, all of which had been used in the case within a few days. The delirium, high temperature, diarrhœa, etc., yielded rapidly under the influence of small doses of Seidlitz powders, frequently repeated, as a substitute for powders, pills and potions. I fully believe in therapeutics; but my theory is, the simpler the better. The stomach must be humored, and its right of ejectment at least, be respected. "Letting severely alone" is more strictly in accordance with common sense. I also as fully believe that the rights of the stomach, so far as the demands for food and drink are concerned, are as much entitled to respect. I do not believe that we are wiser than Nature in this particular. I have rarely seen the patient for whom I could make a diet list, in entire opposition to the natural cravings of his appetite. There is no common sense in attempting it.

In all such matters as this each man must judge for himself, and have the courage of his convictions, derived from his own observation and experience. Follow no man's dictum contrary to your own good judgment; otherwise you become mere imitators, "baffled by every wind of doctrine."

"To break new ground is still one of the uncommon and most heroic of the virtues," says one of the brightest of our American novelists. This is so true in our profession, that it needs no illustration, and yet the profession is full of examples. An equally uncommon and heroic virtue is to courageously acknowledge one's failures, when breaking new ground is not a success. If we are willing to say we do not know, when we are ignorant, publish our bad cases as well as our good ones, we are not only having the courage of our convictions, but we are benefiting every one. The best minds of the world and the best teachers in our profession have been the most courageous in this latter respect.

Professor Conheim says, "I anticipate the time when physicians will more and more regard fever, not

as a condition free from danger, but on the whole as a wise provision of Nature; not as a storm to be controlled by antipyretics, but as a ship to be guided by safe routes, by natural methods, until the storm is past."

Holmes believed that it would be (on the whole) better if all drugs were poured into the sea, than given in the blind, unthinking way they are. To be sure, he pitied the fishes. This was an exaggerated statement, but such men as he and Jackson did much to stay the empirical administration of medicine, so prevalent at that time.

Homans, as a surgeon, has deserved much from the profession, for his frankness and minuteness of detail in his published cases.

Thomas, as a teacher, does not hesitate to admit that many pet theories of his own, have been laid by on the shelf as useless.

Mr. Tait, in a recent paper, admits that there are many cases requiring removal of the uterine appendages, for nervous symptoms alone. His former teaching has been contrary to this. I do not quote his exact language, but simply the substance. He is a man of strong conviction, but his immense experience and broad views have taught him that there is a common-sense association of symptoms and cause; that errors of diagnosis, in this class of cases, have been made, I have no doubt; but that is no fault of the theory.

No man has shown more frankness in acknowledging what he believes to be errors than Mr. Lister. No one has received more criticism, or borne it more cheerfully. The chief point upon which he has been most severely criticised, was that of the use of chemicals in the form of spray into the fresh wounds, with a view to their effect upon the surrounding atmosphere and the noxious germs contained therein. Some of the best men in the profession, throughout the civilized world, honestly and frankly believed and taught that not only were the germs contained in the atmosphere harmless but that a spray of 1 to 40 of carbolic acid, must of necessity be harmful and poisonous. Instances of poisoning were abundant in the current literature of the day, and the opponents of the system declared honestly that such a plan was contrary to common sense, and useless. The fact that open wounds of the face and other parts, difficult to cover and usually clean, healed so promptly was an argument adduced. Yet the spray was insisted upon as a *sine qua non* in surgery.

Read what Mr. Lister says in his address at the last International Medical Congress at Berlin, last August: "As regards the spray, I feel ashamed that I should have ever recommended it for the purpose of destroying the microbes of the air." He goes still further when he says, "And yet I must confess that I have for a long time doubted whether either the washing or the irrigation is really necessary. These doubts have been raised partly by experiments, some of which I mentioned at the London Congress, which had proved to me that normal blood and even pus, were by no means favorable soil for the growth of microbes, in the form in which they are present in the air." This expression of Mr. Lister is that of an honest man, endowed with common sense, and voiced the sentiment of a large number of equally honest, common-sense men, who had opposed the irrigation of fresh wounds by chemicals of a destructive and toxic character. His more modern and simpler asepsis appeals at once to the common sense of all of us, while antiseptics for septic cavities and surfaces, every one approves and uses.

The most wonderful, brilliant meteor that has appeared in the medical sky in our day and generation is certainly the theory advanced by Koch on the cure of tuberculosis. Already its brightness has dimmed; and I believe not many months will elapse ere it will sink in oblivion, and be remembered only as one of the delusions of medical lore. It did not stand from the first as a common-sense method, but the honesty and scientific ability of its originator gave us much to hope.

Having thus briefly touched upon some of the more prominent elements of success in the practice of the profession of medicine, our time will not allow a further discussion as to many other things so essential to the making an ideal physician and surgeon. We must ever remember that there is no royal road to success, in this or any other calling; that there is no mysterious methods in legitimate study; but that by long and patient labor in the lines suggested, a young man who seriously begins his course may reach to almost any point in professional eminence that has ever been attained.

It is an old and very trite saying, that "Genius is simply an infinite capacity for taking pains," which, translated into the language of our theme, means the application of common sense to our every-day life-work.

I cannot better close this paper than by a quotation from an article from the pen of one of London's best writers and investigators, Dr. B. W. Richardson: "Twenty years ago we were steering well and steadily toward great principles on the preventive as well as the curative side of medicine. Then there crept in the wild enthusiasm for bacteriological research,— research good enough in its way, as a piece of natural history, and as disclosing some curious vital phenomena developed under morbid states of the organic structures and the blood, but a positive insanity when accepted as the one absorbing pursuit, restoring the humoral pathology, ignoring nervous function, leading to Babel with its utter confusion of tongues, and separating for a time our modern art of cure from the accumulating treasures of knowledge, wisdom and light of over two thousand years."

Original Articles.

PRODROMAL AND EARLY SYMPTOMS OF BRIGHT'S DISEASE.[1]

BY CHARLES F. WITHINGTON, M.D., OF ROXBURY.

No feature of chronic nephritis, more especially in the interstitial variety of the disease, is more startling than its insidiousness. A man generally supposed to be in good health is suddenly stricken with convulsions, and the urinary examination, then for the first time made, shows renal degeneration to be extensive, inveterate and irremediable. Or the autopsy-table is the first revealer of the chronically contracted kidney, whose slow changes have for years, all unconsciously to its possessor and to his family, been undermining the citadel of life.

[1] Read before the Massachusetts Medical Society, June 9, 1891, and recommended for publication by the Society.

Even the careful medical examiner, with his suspicions aroused, may fail to detect the fatally advancing disease, by urinary examination. Dr. H. C. Wood[2] has published a number of cases in which he says the urine was absolutely normal, so far as his tests could go, and yet advanced cirrhosis of the kidney was present. Flint also insists that the urine of renal cirrhosis is sometimes perfectly normal. Fortunately we may, I think, believe that instances are rare in which interstitial disease fails to betray itself, if examinations are careful and repeated. Yet the experience of these writers, not lacking the support of other authorities, as to the elusiveness of the physical signs of this affection in some instances, may well make us seek for all possible means, in obscure cases, of confirming our evidence.

The class of persons most obnoxious to chronic (interstitial) nephritis, hurried and overworked business men, in the height of their activities and responsibilities, are not introspective. They are not symptom-hunters, and so long as their bodies answer reasonably well to the exacting demands which they make upon them, these men make no complaints. Hence early symptoms, which persons of the other sex or of different temperament would speak about, are unnoticed or ignored.

What are the prodromal or at least the early symptoms, significant of this affection, which should arouse the physician's suspicions and put him on the track of a diagnosis? Such symptoms may, as I have said, be *nil*, or they may be of such a slight and vague character as to point to nothing more serious than digestive disturbance or the result of fatigue. But they will bear the closest study.

Without at the present time going into any discussion of the vexed questions regarding the pathogeny of this disease, and looking upon the subject chiefly in a clinical light, we may, I think, put foremost among the prodromata of chronic interstitial nephritis, some manifestation of *gout*. It may be latent; it may show itself by no more patent sign than lithuria. This connection is generally admitted, though we may not go so far as to say with Tyson that gout is always, sooner or later, followed by interstitial nephritis. That statement is of course to be taken subject to the limitation that the patient must be spared from intercurrent diseases long enough to complete the evolution of his nephritis. A gentleman now under my care with lithuria, a trace of albumen and hyaline and finely granular casts, tells me that 46 years ago he had what was diagnosticated by a prominent Boston physician as gout, though he has never had any arthritic symptoms of the disease since. I have been able to trace a similar connection in more than half my patients either to arthritic gout or to "gravel."

It may be remarked in passing that Virchow,[3] who disputes the currently-believed relation between uric-acid calculi and gout, nevertheless admits the frequent infiltration of urates in various parts of the body, including the kidney, in persons suffering from latent gout, and thinks that both the renal changes and the joint affections are due to the urates loading the blood.

Danforth[4] has recently sketched graphically the development of early pathological changes in the kidneys due to irritating substances in the urine, among the first of which he places uric acid. To a less degree he finds oxaluria and phosphaturia sources of irritation to the tubular epithelium and so of renal inadequacy.

Less intimate as a diathetic antecedent of nephritis than gout, is rheumatism. It not infrequently happens that a rheumatic attack serves to *declare* a contracted kidney. The patient fails to rally well from his rheumatism, and examination reveals an interstitial nephritis, which in some instances doubtless may have antedated the rheumatism.

The growing importance attached to chemical factors in the ætiology of disease (with the discovery of ptomaines and other noxious chemical products of microbic life) and the apparent relation above referred to between uric acid, as a chemical irritant, and the production of renal changes, suggest the inquiry whether other chemical poisons, such as lead and arsenic, which Dr. Putnam has shown us are so frequently detectable in the urine, may not stand in some relation to Bright's disease. If, as one may believe, gout has a kinship on the one side with lead poisoning and on the other with nephritis, it seems not unreasonable that its two congeners might sometimes have a direct communication with each other.

Sir Andrew Clark has described a "renal inadequacy," which he thinks is perhaps a very early stage of Bright's disease, where there is as yet no visible alteration of structure, but where a healthy secretion cannot be produced.[5] The urine is a little scant, has a low specific gravity and is deficient in urea. Such patients take cold easily, and in the event of an acute illness or of a surgical operation, do badly. A restriction of the diet, the author says, increases the urea elimination and the health of the patient. A strong objection to this view has been raised in the query, How, if the kidney is "inadequate" to the secretion of a normal amount of urea, can the reduction of the diet, with the diminution of the material out of which urea could be obtained, possibly increase that product?

The line of demarcation between prodromal and early symptoms of Bright's disease can probably never be sharply drawn. Just when, for instance, lithæmia passes over into the graver affection we may not know. But all persons who have finally died of interstitial nephritis have at some time passed over that (or some other equally) shadowy line. Could it have been known when they were approaching it, treatment then might have been of some avail. Of the symptoms of the early stages of pronounced Bright's disease, some, as will be seen, are far from distinctive. But when they are grouped with others, in themselves no more characteristic, the combination acquires a greater significance.

In classifying the symptoms of Bright's disease one is tempted to use as a basis the various pathological processes which have been recognized as marking the evolution of the disease, as for instance hydræmic plethora, increased vascular tension, endarteritis and vascular degeneration, and finally so-called uræmia. But this classification seems to me unsatisfactory, because, first, many symptoms would come under more than one of these classes. For instance, headache may be produced by increased vascular tension, hydræmia or anæmia. It may come from a degenerated cerebral vessel and be the precursor of an apoplexy, or it may be a "uræmic" symptom. Hæmorrhages are favored, on the one hand, by vascular degeneration, on the

[2] Boston Med. and Surg. Journal, vol. cxii, p. 49.
[3] Berliner Klin. Wochenschrift, 1884, No. 1; and London Medical Record, November, 1884.
[4] Transactions Association American Physicians, vol. v, p. 257.
[5] British Medical Jour., February 24, 1883, p. 345.

other by increased arterial tension, But again, there is not at present any agreement as to what is the primary pathological change, or in what order the others develop. So-called uræmic symptoms are almost certainly not due to retained urea, and are by many referred to vascular changes involving disturbances of circulation. They often are among the earliest instead of the latest symptoms, sometimes occurring in the prealbuminuric stage.

I therefore submit the following list of clinical symptoms, arranged not according to theoretical processes but to organs involved.

SYMPTOMS.

Brain.	
Headache.	Irritability, depression,
Mental states.	Weakness of mind, Delirium, Insanity.
Disorders of sleep.	Sopor, Sleeplessness, Night-terrors.
Motor.	Staggering, Convulsions, Paralyses.
Sensory.	Neuralgias, Paræsthesias, Dizziness.
Coma.	
Digestive.	Vomiting, Dyspepsia, Diarrhœa, Constipation, etc.
Circulatory.	Anæmia, Increased tension, palpitation, angina, Œdema.
Hæmorrhages.	Epistaxis, Retinitis, Hæmoptysis, Apoplexies.
Polyuria.	Frequent micturition, Nocturnal enuresis.
Respiratory.	Cough, expectoration, Dyspnœa, Orthopnœa, Cheyne-Stokes breathing, Asthma.
Œdemas.	Glottis, Pleura, Lung.

The limits of this paper do not of course admit of the discussion of these symptoms in detail. I will merely touch upon one or two, hoping that others will be elucidated in the discussion.

The mental states in Bright's disease are particularly interesting. Early in the affection patients sometimes complain that "the head feels muddy." There is a slight haze over the intelligence which the patient himself is aware of. The soundness of the business judgment may be impaired. Irritability, petulance or depression and moroseness are noted by the friends. The patient becomes a little self-distrustful and possibly somewhat secretive about his affairs and intentions. He shows unusual annoyance, for example, at the loud playing of the organ in church, at street noises, at the importunity of a peddler, etc. He dislikes to reckon or to play cards unless the simplest game, and soon tires of that. He falls asleep by day or perhaps lies awake at night. Suddenly comes an attack of acute delirium, with delusions which in the case that I have just been describing was followed by a series of eclamptic attacks. With recovery from these the delusions disappeared, and the mental state returned to nearly the condition before the active delirium.

The insanity of Bright's is recognized among alienists, not as a distinct type of mental disease, but as of ætiological peculiarity. Dr. Alice Bennett gave an address last year as president of a section of the Pennsylvania Medical Society,[6] upon "Uræmic Poisoning as one of the most frequent causes of Insanity." She described some twelve cases rapidly fatal, in from twelve to ninety days; as many less rapidly fatal (three months to nine and one-half years), eight of rapid and three of slow recovery, and other groups which remained stationary or pursued a very slow downward course.

Dyspnœa is a symptom, which, as will appear later, is one of the most frequent and earliest of Bright's disease. When there is any organic affection of the respiratory organs, as bronchitis, asthma, œdema, or of the heart, the symptom appears very natural. But when there is no structural alteration other than perhaps left ventricular hypertrophy, it is much less easy to explain. This dyspnœa may be continuous or paroxysmal, in the latter form amounting to intense orthopnœa with a sense of asphyxiation. Dr. E. P. Howard,[7] of Montreal, suggests that the continuous dyspnœa may be due to diminution in the number and oxygen-absorbing capacity of the red blood globules, so that the respiration is taxed to furnish the increased oxygen thereby necessitated. As for the paroxysmal dyspnœa, commonly classed as a symptom of uræmia, the mechanism of its production has not been, so far as I know, satisfactorily explained.

In the hope of determining something of the relative frequency of the earlier symptoms of chronic nephritis, I have taken off the data from 100 cases, chosen somewhat at random from the earlier record-volumes of the Nervous and Renal Service of the Boston City Hospital. These cases were all diagnosticated as chronic Bright's, but the variety was not as a rule, specified. The great frequency of œdema as a symptom, seems to make it probable that the prevailing type of the disease was the diffuse or parenchymatous, rather than the interstitial, which detracts from the value of the figures for our present purpose. The minuteness of the early symptom-record depends of course much upon the habit of the clinical recorder, and in these cases the first recorded symptoms range from twenty years to a fortnight before the admission of the patient. In a hospital, of course, patients are not admitted until some positively disabling phase of the disease is present, and their ability at that time to recall the first symptoms of their illness is not always to be depended upon.

Of these 100 persons, then, with "Chronic Bright's," the following numbers had experienced, prior to entering the hospital, the symptoms severally set down against them, which are arranged in the order of frequency:

Œdema	84
Dyspnœa 42 (minus concurrent phthisis 3), leaving	39
Nausea and vomiting	31
Frequent micturition and polyuria	21
Cough 23 (minus concurrent phthisis 3), leaving	20
Headache	20
Rheumatism	18
Pain in small of back	14
Blurred sight	11
Vertigo	10
Palpitation	10
Dyspepsia	8
Neuralgia	7
Weakness	7
Hemiplegia	6

[6] Transactions Medical Society of the State of Pennsylvania, vol. xxi, p. 127.

[7] Canada Medical and Surgical Journal, November, 1884, p. 193.

Syncope and falling	4
Malaria and bilious fever	4
Diarrhœa	3
Pain in right hypochondrium	3
Delirium	3
Convulsions	2
Epistaxis	2
Insanity, sleeplessness, numbness, itching and tremor, each	1

In just one-half these cases are the habits as regards alcohol recorded; and of these 50, 23 used alcohol (the amount not stated), 12 used much liquor, 5 used no liquor.

With a view of studying the evolution of symptoms in the most insidious form of chronic nephritis, I again had recourse to the City Hospital records, this time taking as the starting-point the post-mortem diagnosis of chronic interstitial nephritis. For this purpose, aided in part by the painstaking autopsy-index prepared by Dr. Prescott, I went over the first twelve volumes of autopsy records, covering the years 1873 to 1890, selecting only those cases in which well-marked interstitial disease of the kidney was established by the autopsy. From these I eliminated all surgical cases. Nineteen other cases were rejected in which the patient was brought to the hospital comatose or practically moribund, so that no adequate history of his previous condition was obtainable. Of these 19 patients, I may say in passing, 4 died of convulsions, 4 of hemiplegia, 1 of pneumonia, and the rest in coma.

I have tabulated the remaining cases, 75 in number, of persons dying from, or at least with, chronic interstitial nephritis. Of these, 49 were males, 26 females. The average age was nearly 47.4 years. Twelve of these persons had died of intercurrent affections, that is, diseases not directly connected with the pathological processes of Bright's disease: 7 of pneumonia, 3 of cancer, 1 of meningitis, and 1 of tuberculosis. Subtracting these cases, as possibly incomplete, through having ended prematurely, I find that nevertheless, the remaining 63 uncomplicated cases of Bright's died at exactly the same average age as the whole number, namely, 47.4 years.

Studying the 75 tabulated cases more closely, we learn that 23, or 31%, had suffered from rheumatism. Many of them had had repeated attacks extending over many years; one, for instance, 20, another 30, another 35 years. Four gave a previous history of malaria.

The habits regarding the use of alcohol were recorded as affirmative or moderate in the case of 12, excessive in 10, and abstinent in the case of 4.

In seeking to establish the relative priority or sequence of symptoms, one must be on his guard against placing too much dependence on mathematical averages. The dates which are set down in the tables are computed backward in each case from the time of the patient's death. Often, of course, these dates are lacking, and in proportion to this defect and to the wide departure of any one individual in a small class from the others, the value of averages is impaired. With this preliminary caution, I will enumerate the symptoms in the apparent order of their priority.

1. Polyuria, with frequent micturition, and especially increased nocturnal micturition, was experienced by 25 persons, or 33%; one had it 20 years before death, and 4 for 2 years and over. Eight persons, giving data on this point, showed an average of 3¾ years of polyuria before death. This average does not, as some others will be seen to do, require to be raised to represent the true figure.

2. Dyspnœa was experienced by 47, or 64%, being the most frequent symptom. The longest case was 40 years. The average of 26 persons giving dates, was 108 weeks, or a little over 2 years. But this average requires to be materially raised, from the fact that it does not include 4 persons who had had dyspnœa for "years" and 1 who had had it "always." So that the true average date of dyspnœa should be carried back nearer to that of polyuria.

3. Œdema, observed in 38 cases, or 51%. (This will be remembered in comparison with the 84% of œdema in the mixed cases of chronic Bright's.) The longest cases were 15 and 12 years. The average of 29 persons was 69 weeks, which requires to be slightly raised on account of a 30th person who had had it for "years."

4. Cough occurred in 41 persons, or 56%. The longest 10 years: 2 for 5 years. The average of 32 persons, 47 weeks, which is somewhat too low, as there were three others who had had it for "years."

5 (or 6). Palpitation, 19 persons, or 25%. The average of 9 persons had had it for 26½ weeks, which is a little too low, as it does not include one person who had had it for "years."

6 (or 5). Headache, 20 persons, 27%. Two had had it "always" and one for "years," which should materially raise the average of 11 others who had had it for 21 weeks.

The remaining symptoms average too near each other and are based on too small a number of cases to warrant an opinion on their relative priority.

Nausea and vomiting, present in 37 patients, or 49%. One had had vomiting "always," one for "years," and 24 others averaged 9½ weeks before death. This average is probably too low.

Amblyopia, in 11 persons, or 15%. One person had had it 7 years. Including him in 6 cases giving dates, we should have an average of 54 weeks; omitting him 5 cases give 16 weeks, which is doubtless nearer right.

Vertigo, in 13, or 17%. The earliest 22 weeks; the average of 5, 9 weeks.

Diarrhœa, in 16, or 21%. One had it for 10 years. The average of 10 others, 6.2 weeks. (Per contra, 3 record constipation.)

Lumbar pain, in 4 persons, 5%; which shows the popular fallacy of back-ache as a symptom of Bright's, at least in this form.

Cerebral hæmorrhage occurred in 10 persons, or 13%. The earliest was 5 years before death. Three had 2 attacks, and 1 had 3. Six died from hæmorrhage of brain, or meninges.

Other hæmorrhages occurred as follows: of the nose, 7; of the lungs, 6; bowels, 2; stomach, 1.

Delirium occurred in 15, or 20%. It was generally a late symptom, the earliest case being 3 months, and 11 cases appearing first within the last two weeks of life.

Disorders of sleep are thus classed: insomnia or vigil in 11; drowsiness or sopor in 4. Rather a late symptom.

Convulsions, of course, occur late. They are recorded in only 7, or 9%. Coma, prior to the day of dissolution, in 26. Cyanosis is spoken of in 11 cases; in at least 5 it was noted 10 days or more before death.

Of other symptoms, infrequent, but of significance,

TABLE OF 75 CASES OF CHRONIC INTERSTITIAL NEPHRITIS.—Diagnosis from Autopsy.—*From Boston City Hospital Records.*

Case No.	Sex.	Age.	Previous Diseases.	Use of Alcohol.	Œdema.	Dyspnœa.	Cough.	Palpitation.	Nausea and Vomiting.	Headaches.	Amblyopia.	Vertigo.	Diarrhœa.	Polyuria and Frequent Micturition.	Lumbar Pain.	Hemiplegia.	Hæmorrhages.	Delirium.	Disorders of Sleep.	Convulsions.	Coma.	Cyanosis.	Other Symptoms.	Other Diseases or Causes of Death.
1	m	23	"Black Fever" 4 yrs.										22 ds.											
2	f	51			yes.		3 wks.		14 wks.														Dysenteric.	Uterine tumor.
3	f	56			3½ wk.		3½ mos. & expect'n.																Itching.	
4	f	45	"Typhus and lung" fever. 11 mos.		9½ wk.	yes.	yes.	yes.					yes.											
5	m	36					yes.				yes.		yes.										Sore throat, 5–6 weeks.	
6	m		Dysentery, 3 mos.						3 mos.				3 mos.										Stomach pain. Weakness, 3 months.	Cancer of liver.
7	f	25			6 wks.	6 wks.			6 wks.															
8	m	50		much.	yes.	yes.		yes.	yes.	yes.	5 mos.			yes.	yes.								Weakness.	
9	m								yes.	yes.		yes.									2 ds.		Abdom. pain. Indigestion.	
10	m	35								7 ds.	7 ds.	7 ds.		yes.									Mind dull.	Meningitis.
11	f	74					7 wks. & expect'n.						Consti'p. mos.								3-4 ds.		Indigestion and weakness, 3 months.	
12	m	63	Rheumatism, 20 yrs.	much.		2 yrs.	yes.							yes.				5 ds.					Tremor. Weakness, 2 years.	
13	f	24	Jaundice, 2 yrs. for 6 wk.	mod.		yes.	yes.		4 wks.											3 ds.	3 ds.		Indigestion and weakness, 2 years.	
14	f	41				2 wks.															yes.	yes.		Croupous pneumonia.
15	m	50		none.	1 yr.	1 year.			yes.	1 year.	6 mos.			yes.							3 ds.		Weakness.	
16	m	52	Rheum. 8 or 9 times.										5 ds.										Parotitis, 2 days.	
17	m	27	Pleurisy 8 yrs. ago, fistula.	none.	2 wk.	4 days.	10 yrs.		2 wks.	2 wks.	2 ds.													Pneumonia.
18	m	43		mod.	15 yr.	orthop.	5 wks.		yes.		2½ mos.			yes.									Staggers, 2½ mos. Weakness. 2½ mos.	
19	f	59														18 mos. and 4 ds.	brain.						Aphonia, 1 week.	Cerebral hæmorrhage.
20	m	76	Rheumatism, 30 yrs. lead colic, 20–30 yrs.		1 wk.	5 wks.	5 wks.	5 wks.						yes.										
21	m	32			12 d.		1 mo.		8 ds.				8 ds.			yes.	nose, 12 ds. mening.				5 ds.		Neuralgia, 6 months.	Meningeal hæmorrhage.
22	m	43	Rheumatism, 5 yrs.			yes.	6 wks.	yes.	yes.	yes.														
23	f	24			16 wk.	yes.		yes.	yes.	yes.	yes.	yes.		yes.			nose, 4 wks.		vigil.				Night terrors.	
24	f				11 d.		2-3 wks.		11 ds.				4 wks.								1 day.		Chills, 2 weeks. Sore throat.	
25	m	70			4 wk.	yes.	"years."	"years."	6 wks.			yes.	yes.	8 ds.								11 ds.	Jaundice, 7 days.	
26	m	66	Rheumatism twice.		yes.	9 wks.	2 yrs.	yes.										3 wks.			1 day.			Aortic aneurism.
27	m	81			1 yr.	40 yrs.												4 ds.			1 day.		Præcordial pain, 4 months.	
28	m	53	Malaria 2 yrs. ago.			yes.	4 wks. & expect'n.		yes.					yes.						2 ds.	3 ds.		Thirst.	Œdema of brain, and small tumor of brain.
29	f	23			3 mos.	13 wks.		13 wks.	yes.			5 mos.					nose, 10 wks.						Weakness, 5 months.	
30	m	67			7 mos.	7 mos.	7 mos.							7 mos.									Ascites.	Mitral stenosis.
31	m	44	Epilepsy from childhood. Rheum. 30.	much.		6 wks.							6 wks.								1 day.			Endocarditis, chronic.
32	m	51	Rheumatism, 10 yrs.			2½ mos.	2½ mos.		8 ds.	yes.		yes.						5 ds.	vigil.				Weakness, 2½ months.	Acute pleurisy.
33	m	43	Rheumatism, 18 yrs. Malaria.			1 wk.			1 wk.														Thirst. Sore throat, 1 week. Pain in side, 3 days.	
34	f	38	Erysipelas, 7 yrs.			1 mo.	10 wks. +	10 wks.+	10 wks.+	10 wks.		10 wks.		1 mo.			nose, 10 wks.	3 ds.	sopor. 2 wks.			10 ds.	Thirst, 10 weeks+ Epigastric pain.	Aortic and mitral disease.
35	f	55	Rheumatism, 35 yrs.		2 yr.	"years."	3 mos.	1 year.	2 ds.	2 mos.		2 mos.					nose, 4 yrs. stomach, do.	2 wks.				yes.	Neuralgia. Paræsthesia. Indigestion, 2 mos.	
36	m	60														4 wks.								
37	m	26	Malaria, 10 yrs.	mod.	2 d.	yes, paroxysms, 9 wk.	9 wks.	9 wks.	9 wks.	always, worse 9 wks.	7 yrs.	yes.		4 yrs.			nose always. lungs.	2 wks.	sopor. 4 ds.				Epistaxis, finally several daily.	
38	m	33		none.		yes.		yes.	3 wks.								bowels, 1 wk.		vigil.	5 ds.	1 day.			
39	m	46		mod.	5 mos.	14 mos. orthopnœa & choking.	6 mos.	14 mos.	6 mos.				6 mos.	6 mos.			bowels.			1 day.			Thirst, 8 months. Paræsthesia (sense of cold), 11 weeks. Weakness, 14 months.	
40	m	60			yes.					years. severe 18 ds.									sopor. 18 ds.	yes (3).	yes.			
41	m	75		mod.	7 wk.		yes.			2 yrs.			yes.	2 yrs.										
42	m	53	Rheumatism, 20 yrs.	yes.					2 wks.				2 wks.	yes.		24 ds.					1 day.		Paræsthesia.	
43	m	68		yes.		always.	3 mos.						1 day.	yes.					vigil.		1 day.	1 day.		
44	m	35	Rheumatism, 20 yrs. and several since.	much.		4½ wk.		4½ wks.		4½ wks.			4½ wks.				nose, 2½ wks.				1 day.		Very weak, indigestion.	
45	f	50	Rheumatism, 4 yrs.		2 mos.	yes.	yes. & expect'n.	yes.						yes.	yes.				vigil.		3 ds.	3 ds.		
46	f	60	Rheumatism, 3 yrs.							10 ds.						10 ds.	brain.				3 ds.			Cerebral hæmorrhage.
47	m	17	Rheumatism.	yes.	3 mos.				yes.	yes.			Const'p.	yes.				3 mos.		2½ yrs.			(8–10 "uræmic" attacks.)	
48	m	32	Rheum. "years." Syphilis.	yes.		17 wks.	17 wks. & expect'n.			yes.			Const'p.	yes.			lungs, 5 wks.		vigil.				Abdom. pain, 3 weeks.	[No phthisis.]
49	m	68		yes.	4 wk.	15 wks.	4 wks.	15 wks.				yes.	20 yrs.			?							Tinnitus.	Cerebral softening.
50	m	62	Malaria, 20 yrs. Rheumatism.	mod.			3½ mos.		years.					20 yrs.					vigil.				Indigestion, years.	Acute pneumonia.
51	m	37			4 wk.	18 wks.	3 mos.		18 wks.		5 mos.	4 wks.					lungs, 3 mos.					2 mos.	Syncope and staggering, 18 weeks.	
52	m	76			yes.	3½ wks.	3½ wks.											3½ wks.						
53	f																	3 wks.				3 wks.		
54	m	54		much.	3½ mo.	3½ mos.	yes.										lungs.		vigil.				Mental weakness.	
55	m	50	Rheum. 16½ yrs.	much.	12 yr.																			

11	f	74					7 wks. & expect'n.							mos.										Indigestion and weakness, 6 months.	
12	m	63	Rheumatism, 20 yrs.	much.		2 yrs.	yes.								yes.				5 ds.					Tremor. Weakness, 2 years.	
13	f	24	Jaundice, 2 yrs. for 6 wk.	mod.		yes.	yes.		4 wks.												3 ds.	3 ds.		Indigestion and weakness, 2 years.	
14	f	41				2 wks.																yes.	yes.		
15	m	50		none.	1 yr.	1 year.			yes.	1 year.	6 mos.				yes.							3 ds.			Croupous pneumonia.
16	m	52	Rheum. 8 or 9 times.											5 ds.										Weakness.	
17	m	27	Pleurisy 8 yrs. ago, fi-tula.	none.	2 wk.	4 days.	10 yrs.		2 wks.	2 wks.	2 ds.													Parotitis, 2 days.	
18	m	43		mod.	15 yr.	orthop.	5 wks.		yes.		2½ mos.				yes.										Pneumonia.
19	f	59														18 mos. and 4 ds.	brain.							Staggers, 2½ mos. Weakness. 2½ mos.	
20	m	76	Rheumatism, 30 yrs. lead colic, 20–30 yrs.		1 wk.	5 wks.	5 wks.	6 wks.							yes.									Aphonia, 1 week.	Cerebral hæmorrhage.
21	m	32			12 d.		1 mo.		8 ds.					8 ds.		yes.	nose, 12 ds. mening.					5 ds.		Neuralgia, 6 months.	Meningeal hæmorrhage.
22	m	43	Rheumatism, 5 yrs.			yes.	6 wks.	yes.	yes.	yes.															
23	f	24			16 wk.	yes.		yes.	yes.	yes.	yes.	yes.			yes.		nose, 4 wks.		vigil.					Night terrors.	
24	f				11 d.		2-3 wks.		11 ds.					4 wks.							1 day.			Chills, 2 weeks. Sore throat.	
25	m	70			4 wk.	yes.	"years."	"years."	6 wks.			yes.	yes.	8 ds.									11 ds.	Jaundice, 7 days.	
26	m	66	Rheumatism twice.		yes.	9 wks.	2 yrs.	yes.										3 wks.				1 day.			Aortic aneurism.
27	m	81			1 yr.	40 yrs.												4 ds.				1 day.			
28	m	53	Malaria 2 yrs. ago.			yes.	4 wks. & expect'n.		yes.						yes.					2 ds.	3 ds.			Præcordial pain, 4 months. Thirst.	Œdema of brain, and small tumor of brain.
29	f	23			3 mos.	13 wks.		13 wks.	yes.			5 mos.					nose, 10 wks.							Weakness, 5 months.	
30	m	67			7 mos.	7 mos.	7 mos.								7 mos.									Ascites.	
31	m	44	Epilepsy from child-hood. Rheum. 30.	much.		6 wks.								6 wks.								1 day.			Mitral stenosis.
32	m	51	Rheumatism, 10 yrs.			2½ mos.	2½ mos.		8 ds.	yes.		yes.						5 ds.	vigil.					Weakness, 2½ months.	Endocarditis. chronic.
33	m	43	Rheumatism, 18 yrs. Malaria.			1 wk.			1 wk.															Thirst. Sore throat, 1 week. Pain in side, 3 days.	Acute pleurisy.
34	f	38	Erysipelas, 7 yrs.			1 mo.	10 wks. +	10 wks.+	10 wks.+	10 wks.		10 wks.			1 mo.		nose, 10 wks.	3 ds.	sopor. 2 wks.				10 ds.	Thirst, 10 weeks+ Epigastric pain.	
35	f	55	Rheumatism, 35 yrs.		2 yr.	"years."	3 mos.	1 year.	2 ds.	2 mos.		2 mos.					nose, 4 yrs. stomach, do.						yes.	Neuralgia. Paræsthesia. Indigestion, 2 mos.	Aortic and mitral disease.
36	m	60														4 wks.		2 wks.							
37	m	26	Malaria, 10 yrs.	mod.	2 d.	yes, paroxysms, 9 wk.	9 wks.	9 wks.	9 wks.	always, worse 9 wks.	7 yrs.	yes.			4 yrs.		nose always. lungs.	2 wks.	sopor. 4 ds.					Epistaxis, finally several daily.	
38	m	33		none.		yes.		yes.	3 wks.								bowels, 1 wk.		vigil.	5 ds.	1 day.				
39	m	46		mod.	5 mos.	14 mos. orthopnœa & choking.	6 mos.	14 mos.	6 mos.					6 mos.	6 mos.		bowels.			1 day.				Thirst, 8 months. Paræsthesia (sense of cold), 11 weeks. Weakness, 14 months.	
40	m	60			yes.					years. severe 18 ds.									sopor. 18 ds.	yes (3).	yes.				
41	m	75		mod.	7 wk.		yes.			2 yrs.				yes.	2 yrs.										
42	m	53	Rheumatism, 20 yrs.	yes.					2 wks.					2 wks.	yes.		24 ds.				1 day.			Paræsthesia.	
43	m	68		yes.		always.	3 mos.							1 day.	yes.				vigil.		1 day.	1 day.			
44	m	35	Rheumatism, 20 yrs. and several since.	much.		4½ wk.		4½ wks.		4½ wks.				4½ wks.			nose, 2½ wks.				1 day.			Very weak, indigestion.	
45	f	50	Rheumatism, 4 yrs.		2 mos.	yes.	yes. & expect'n.	yes.							yes.	yes.			vigil.		3 ds.	3 ds.			
46	f	60	Rheumatism, 3 yrs.							10 ds.							10 ds.	brain.			3 ds.				Cerebral hæmorrhage.
47	m	17	Rheumatism.	yes.	3 mos.				yes.	yes.				Const'p.	yes.			3 mos.		2½ yrs.				(8–10 "uræmic" attacks.)	
48	m	32	Rheum. "years." Syphilis.	yes.		17 wks.	17 wks. & expect'n.			yes.				Const'p.	yes.		lungs, 5 wks.		vigil.					Abdom. pain, 3 weeks.	[No phthisis.]
49	m	68		yes.	4 wk.	15 wks.	4 wks.	15 wks.				yes.		20 yrs.		?								Tinnitus.	Cerebral softening.
50	m	62	Malaria, 20 yrs. Rheumatism.	mod.			3½ mos.		years.						20 yrs.				vigil.					Indigestion, years.	Acute pneumonia.
51	m	37			4 wk.	18 wks.	3 mos.		18 wks.		5 mos.	4 wks.					lungs, 3 mos.						2 mos.	Syncope and staggering, 18 weeks.	
52	m	76			yes.	3½ wks.	3½ wks.											3½ wks.							
53	f																	3 wks.					3 wks.		
54	m	54		much.	3½ mo.	3½ mos.	yes.										lungs.		vigil.					Mental weakness.	
55	m	59	Rheum. 16½ yrs. and since	much.	12 yr.	5 mos.		16 mos.	4½ mos.						3 yrs.			2 ds.	sopor, 2 mos.					Indigestion, 4½ mos. Cheyne-Stokes resp.	
56	m	69		yes.	5 mos.											6 mos.	brain.					2 ds.		Cheyne-Stokes, 2 days.	Cortical hæmorrhage.
57	m	43	Rheum. 10 yrs.	much.	1 yr.				2 wks.	1 yr. +				2 wks.								1 day.		Jaundice.	Catarrhal gastro-duodenitis.
58	f	53				yes.			11 mos.													1 day.			Cancer of liver.
59	f	70							2 wks.							5 wks.									Acute broncho-pneumonia.
60	m	38		much.		4 wks.	2 mos.										lungs, 10 wks.		vigil.						Pneumonia, gangrene lung.
61	m	49		much.	3 wk.	4½ mos.	4½ mos.		4½ mos.								nose, 4 ds.		vigil.					Brick-dust sed.	
62	m	61		much.					10½ wks.	yes.														Indigestion, 10½ weeks.	Cancer of Stomach.
63	f	62			years.	years.	3 mos.		"always."		yes.				yes.						3 days.			Orthopnœa, 7 weeks. Cheyne-Stokes.	2d hemiplegia.
64	f	27							6 wks.	always.						5 yrs. and 3 ds.		1 wk.		6 wks. (and 5 since.)	1 wk.			Itching, 2 weeks.	
65	f	36				5 yrs.	5 yrs.															2 wks.			Tuberculosis, lungs & intestine.
66	m	66	Rheum. 10 yrs.		yes.	yes.	3 wks.								yes.									Itching, 6 weeks.	Rupture, aortic aneurism.
67	f	59			yes.	years.	years.	yes.	yes.			yes.						1 day.				years.		Thirst.	
68	f	35	Phlegmonous erysipelas, 9 mos.	none.	1 yr.	1 day.									yes.		lungs, 4 ds.								Acute pneumonia.
69	m	48	Rheumatism, 6 yrs,		9 wk.		15 mos.				yes.	yes.			yes.							1 day.		Syncope.	
70	f	64	Rheumatism.			years.		yes.										12 ds.				6 wks.			
71	m	62	Rheumatism, 6 yrs.			yes.	5 yrs.																		Acute pneumonia.
72	f	60	Rheum. "years."		2 yr.	"months."	"years." expect'n.		1 wk.							"weakness."		5 ds.				2 wks.			Cerebral hæmorrhage.
73	m	58														4 mos. and 2 wks.								Weakness, months.	Chronic valve disease.
74	f	73				"months."	3½ mos.												vigil, 3 mos.			1 day.			Cerebral hæmorrhage.
75	m	40														3 yrs. 9 mos. and 3 ds.									

I may mention: Itching in 2 persons; other paræsthesiæ in 3; thirst in 4; neuralgia in 2; sore-throat in 2; Cheyne-Strokes respiration in 3.

HALLUCINATIONS IN THE INSANE.[1]

BY EDWARD B. LANE, M.D.,
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Hallucinations and kindred phenomena have, from the earliest times, made a profound impression on the human mind. They have awakened man's sense of awe and stimulated his curiosity. They have appealed to his fears and nourished his egotism. As is well known, they have contributed, in no small measure, to various religious beliefs, and they have exerted an influence in the affairs of nations. In recent times, hallucinations, like many other phenomena, have been subjected to critical study by the faithless materialism of our day, with the result that we are asked to regard all such as due to morbid cerebral action. This belief is, however, far from being universally adopted at present. The majority of people are yet inclined to look upon a vision as something uncanny, and prefer to believe the hallucinated as holding some occult relation to the supernatural world; unless, indeed, there is reason to believe one experiencing an hallucination to be insane. Fortunately to-day the spiritual theory of mental disease is all but obsolete. While men are willing to allow that hallucinations of the insane are subjective and pathological, they cling to the belief that hallucinations in the sane are a source of revelation from the spiritual world.

It is certain, however, that hallucinations of the senses are capable of being explained in physiological terms; also that they are a frequent symptom of various forms of mental disease, and in one form (paranoia), at least, it would appear that they are a constant symptom.

Yet, no one will deny that hallucinations occur independently of mental disease; although we may not call an hallucination physiological. How frequently they occur in the sane I am sorry to say I cannot tell. The census that is now being taken in this country has not been sufficiently analyzed. It will show probably that not far from ten per cent. of the adult population have had, at least, one hallucination. Whatever the result may be I think it will prove to be a surprisingly large one — allowing *liberally* for errors necessary to such a faulty method of collecting statistics.

For several years I have observed the acute cases of insanity coming under my notice, with especial reference to the presence or absence of hallucinations. It is the statistical results of such analysis that I have ventured to present to you to-night. I shall await with much interest the analysis of the census of hallucinations among the sane. Perhaps not until they are published will the results of the small number presented here be of much significance.

It is not my purpose to discuss the nature or origin of hallucinations, whether in the sane or insane — but by way of explanation, I will simply state that I regard all hallucinations as the result of perverted action of the sensory regions of the cerebral cortex — thus closely allied to the function of memory and the phenomena of dreams.

[1] Read before the Boston Medico-Psychological Society, March 19, 1891.

The almost inevitable result of an hallucination, whether in a sane or insane person, is a delusion. This will not be an ***insane*** delusion necessarily. Such delusions are, first, an explanation of the false perception itself and this explanation varies with the past experience of the individual, his education and beliefs — secondly, in the insane, delusions regarding the supposed author of the apparition or voice.

The writer has long had a theory that the prevalence of hallucinations in the sane explained the growth of the delusion (as he regards it) of spiritualism in this community.

There is a large clientèle of victims of occasional false hearing, or false sight, who grasp with eagerness any explanation of their experience which coincides with their previous education, and, at the same time, tends to increase their own importance.

It is customary in hospitals to speak of a patient becoming insane through spiritualism. I prefer to believe that spiritualism is the result of hallucinations, and that insanity would have been very likely to occur even though the theory of spiritualism had not been previously accepted.

The relation of hallucinations to delusions is a very intimate one, and is very important in the study of insanity. Delusions are found in the insane who have not experienced hallucinations — more especially is this true in acute mania and general paralysis, for in these diseases the characteristic delusions are less apt to be based on hallucinations. In paranoia, on the other hand, the delusions are, in most cases, the direct outcome of hallucinations. In many cases of melancholia, also, the depression is increased by the hallucinations, though both hallucinations and delusions are secondary to the sense of depression. In this affection, however, the hallucinations appear to give rise to a great variety of secondary or superimposed delusions.

While this paper is devoted to the subject of hallucinations it is necessary to explain that I have found great difficulty, practically, in differentiating hallucinations and illusions in the insane. Clearly marked illusions I found rather rare. Yet, in the case of certain senses, it must be admitted that it is almost impossible to say that a given experience is not an illusion. We can verify the patient's story when he claims to see a face in the dark or hear the voices when all is quiet. But, if he says he felt a hand, it is clearly impossible for the observer to be sure there was no external irritation. This difficulty obtains as well in the senses of smell and taste. The patient says he tastes arsenic in his food. He is eating, and various substances are being perceived by their smell and taste. Still more is this true of visceral hallucinations, as we cannot assert the patient may not be subject to various sensations which he misinterprets.

Because of the impossibility of accurately distinguishing illusions from hallucinations I have considered them all as hallucinations.

Physiologically, the two symptoms are so much alike I think the distinction a very unimportant one in this connection. Yet the few cases where the trouble was clearly illusions of sight and hearing, unaccompanied by hallucinations, have not been considered in the statistics presented.

Nor have I attempted to tabulate all the cases of insanity seen. The cases presented are a small fraction of those seen by me, but believing a few hundred cases carefully analyzed would be much more valuable

for statistics than a larger number poorly studied, I have limited myself to those cases where I could get a fair history, or have observed the case long enough myself to make a diagnosis. I have also rejected many doubtful cases. As shown by the table presented I have rejected all cases of secondary delusional insanity and secondary dementia, for various reasons, chiefly because the acute forms of mental disease are more profitable to study, and the secondary conditions are in no proper sense forms of mental disease, no more than the wrecks along the beach are to be classed as a special form of ocean craft.

As shown by the table the total number of cases studied is 307.

HALLUCINATIONS.

	Hearing alone.	Sight alone.	Smell or Taste.	Hearing and Sight.	Hearing, Sight and Smell.	Hearing and Touch.	Hearing, Sight and Touch.	Sight and Smell.	None.	Total.
Paranoia,	38	1	1	18	5	2	1	1		67
Acute melancholia,	32	5		9	4				5	55
Acute mania,	15			3					20	38
General paralysis,	9	2	1	3					19	34
Post-paralytic insanity.		1		2					7	10
Other Organic brain disease,	3			2	1*					6
Epileptic Insanity,	4	4								8
Insanity of pubescence,	4			2					5	11
Katatonia,	2			2						4
Hysterical insanity,				1					5	6
Senile insanity,	6	5		2					16	29
Alcoholic insanity,		1		2						3
Recurrent mania,				1					3	4
Folie de doute,	1									1
Simple mania,									2	2
Simple melancholia,									10	10
Folie circulaire,									7	7
Senile dementia,									6	6
	114	19	2	47	10	2	1	1	111	307

* And Touch.

PARANOIA.

Out of 67 cases of paranoia there were none who did not at some time have hallucinations, and in only three of this number were hallucinations of hearing not found. In one of these cases hallucinations of sight and of smell or taste were very constant. He was inclined to talk much about his delusions, but I never could get any evidence of hallucinations of hearing, and I think it very doubtful if he had them. In the other two I cannot feel sure that they may not have existed and were not noticed. Neither of these cases were inclined to talk about themselves.

It would appear from this that not only are hallucinations to be expected in all cases of paranoia, but that the absence of auditory hallucinations is rare. I have heard old asylum attendants say that false hearing was a bad sign. I think this observation due to the bad prognosis in paranoia, and the more or less continuous presence of this symptom during the course of this disease.

Hallucinations of hearing unaccompanied by those of the other senses, occurred in 38 cases, or considerably more than half. Hallucinations of sight and hearing in 19 cases — and also in five more cases in which hallucinations of smell (or taste) were present in addition.

In one case there were hallucinations of sight alone. In one case only hallucinations of smell or taste occurred alone. In two cases hallucinations of hearing were accompanied by tactile and visceral hallucinations or illusions.

To summarize — Hallucinations of one sense only were noted in forty cases; of two or more senses, in twenty-seven cases.

ACUTE MELANCHOLIA.

Out of 55 cases of acute melancholia (excluding simple melancholia) in 50, or a little more than 90 per cent. were hallucinations a symptom. Here, as in paranoia, hallucinations of hearing preponderate, for in only five of the 50 hallucinated cases did they fail to be noted. In 18 cases there were hallucinations of sight, in five of which this symptom occurred alone, in the others with false hearing. In four cases three senses were involved; namely, sight, hearing and smell or taste. In no case did I note hallucinations of smell or taste alone.

ACUTE MANIA.

In acute mania, hallucinations were less frequent than in the two diseases just considered. Out of 38 cases, 20, or a little more than half, gave no evidence of hallucinations. In the 18 cases where they were found, those of hearing were present in every one; in three cases hallucinations of sight occurred as well. Other senses were not affected.

GENERAL PARALYSIS.

This symptom was present in 15 out of 34 cases of general paralysis.

Hallucinations of hearing are again more frequent, being present in 12 cases (in nine alone, in three with visual). Those of sight were noted in five cases, and of smell or taste in only one, and then without those of other senses. In these rather few cases hallucinations were not a continuous symptom, but appeared transiently and rather in the first stage.

OTHER DISEASES.

Hallucinations were present in three of ten cases of post-paralytic insanity, and in all of six other cases of organic brain disease. Grouping them together we find this symptom in nine of 16 cases; auditory in eight, and visual in six. In one of these cases was noticed what is unique in this series, hallucinations of four senses: namely, hearing, sight, smell and touch. This series includes eleven cases of insanity of pubescence, in six of which hallucinations of hearing were observed, and in two of the latter those of sight occurred also.

In considering epilepsy I have not tabulated all the epileptics seen in the hospitals, but have taken merely those cases in which there was decided mental alienation. Out of 14 such cases hallucinations were present in eight. In these few cases hallucinations of more than one sense in the same case were not found. Four cases had auditory, and four visual, hallucinations.

Hallucinations of hearing were present in all the four cases of katatonia, two of which had visual hallucinations as well.

I fear my experience in hysterical insanity has been exceptional, as I have noted hallucinations as present in only one of six cases. In this case there were both visual and auditory hallucinations.

There are 29 cases tabulated as senile insanity. Here rather less than half (namely 13), experienced hallucinations. Eight of these had auditory, and seven visual, hallucinations. As will be seen the two forms of hallucination occurred together in two instances.

In classifying this series of cases, three cases were found in which the mental disturbance was so clearly due to alcoholic excess, and the cases could not easily be put in any other group here mentioned, that I have called them alcoholic insanity. As was to be expected, they all had hallucinations. More than this, all three had hallucinations of sight, — two had auditory as well, and one of them complained of various visceral sensations in addition.

In order to determine what part, if any, abuse of alcohol played in causing hallucinations in mental disease, aside from delirium tremens, I have grouped for study those cases in this series where there was marked alcoholic excess. There are eighteen such in addition to the three mentioned. Out of these 21 cases, in only four were there no hallucinations. Of the 17 cases where the symptom was present, only two failed to have false hearing, and they had visual hallucination. Nine had auditory hallucinations alone; six had auditory and visual, of whom three had olfactory as well. I am aware the cases are too few from which to draw valuable deductions. But, as far as they go, they fail to show that hallucinations are much more common in alcoholic subjects. But it does appear that visual hallucinations are relatively more frequent in alcoholic cases.

There are four cases of recurrent mania, a periodic insanity, one of the degenerative psychoses, — hence they are not included under the head of acute mania; only one of these had hallucinations. Only one case of folie du doute appears. Hallucinations of hearing were present. Twenty-five cases yet remain to be examined. In these no hallucinations were observed. They are classified as: Two cases simple mania; 10 cases simple melancholia; 7 cases folie circulaire; 6 cases senile dementia. Thus, taking cases as they come from this series, it appears that 63.87% have at some time hallucinations of some sense, and 36.13% have no hallucinations.

Excluding the diseases in which we found no hallucinations, let us consider the 282 cases of diseases in which hallucinations may be expected to occur.

	No. Cases.	Per Cent.
Hallucinations present	196	70
" absent	86	30
" of hearing . . .	175	62
" of other senses without auditory hallue. .	21	8
" of sight . . .	77	27.3
" of smell or taste . .	13	4.6
" of touch . . .	4	1.5
" of viscera . . .	9	3.2*
" of sense of equilibrium,	3	1*

* This symptom is not indicated in the table, as it would have made it undesirably complicated. The cases in which they occurred, however, are all tabulated as hallucinations of other sorts occurred in them.

There are nine cases in which anomalous visceral sensations were complained of, which I believe to be analogous to hallucinations. It must be admitted, however, that such cases are often found to have serious lesions, which may give rise to unusual sensations. For example, a woman who claimed to feel a number of animals (ferrets, worms and leeches) in her body, was found to have a bony tumor on the ileum.

In three cases, at least, there appeared to be an hallucination of the sense of equilibrium. I have seen this in one other case, not included in this series. While it might be claimed that the sensation of vertigo, not caused by a previous oscillation or rotation of the body, was strictly an hallucination of the sense of equilibrium, the examples referred to me do not refer to the feeling of vertigo, strictly speaking. One of them, to use her own words, complained of a spinning sensation. I have suspected this condition to exist in the case of an epileptic patient, who, several times when delirious, believed himself to be aboard a moving train. In the case not included in the three tabulated here, a man had the delusion he was aboard ship, but he confessed to feeling the motion of the vessel. It is remarkable that this disturbance is not much more frequent, as it is so very common in our dreams, — almost universal, I should say, — to experience the feeling of falling rapidly just before waking.

In one case only have I noted what might be an hallucination of the muscular sense. In this case a man complained that his arm felt tired in the morning from the weight of his wife (who had been dead for some time). But as this is capable of another explanation, I do not care to cite it as a clear case of muscular hallucination.

Tamburini has recently published several very interesting cases of hallucination of the muscular sense. It is now all but universally admitted by psychologists that there is a muscular sense. If so, why may we not find hallucinations of such a sense? The cases reported by Séglas and Tamburini are, without question, to be considered muscular hallucinations. It is an interesting fact, that in all their cases the hallucinations were referred to the vocalizing organs. So, too, in the vast majority of auditory hallucinations, it is "voices" that are heard.

It appears that it is these sensory images most used in thought that are most likely to be revived as hallucinations during perverted cerebral action.

From a study of the subject of aphasia it appeared to the writer that the majority of men think in auditory rather than other images. It would be out of place to present the reasons for this conclusion here; but I desire to call attention to what appears to me to be a very significant fact. The preponderance of hallucinations of the sense of hearing over those of other senses is due, I believe, to more than accident. It is due to the physiological law of thought, if I may be allowed the term. As a rule, we are inclined to think in auditory images. Certainly the child who has not learned to talk, but understands what is said to him, must think in auditory images so far as names go. This early training must do much toward forming a habit of thought in auditory images; and by the usual methods of instruction other images acquired in the use of language are superimposed on the auditory.

In this connection it is interesting to note that the commonest answer received to the questions sent out for the census of hallucinations is, "I heard my name

called." And although I have not analyzed these cases with reference to the matter of the hallucination, and have therefore no figures, my impression that hearing the name called, or being "called out of one's name," as our Irish patients say, are the commonest experiences with the insane.

If an hallucination be simply the revival of a past sensory impression, why may we not have an hallucination of a painful sensation? This is almost impossible to affirm in a given case; but I can see no reason, *a priori*, why such an hallucination may not exist. A feeling of pain referred to an amputated member need not be regarded as an hallucination, however, for an irritation of the stump might cause a true pain, which by an error of judgment would be associated with the lost part.

I was interested in Dr. Prince's paper, read before the Society this winter, on the subject of hysterical pains. He offered an explanation that they were due to an association process. If I understood him, it would seem as though that were an hallucination, the idea or memory of pain being so thoroughly recalled as to make the patient project the sensation to the affected part. Unfortunately, pain is purely subjective, and we can but theorize on its reality when claimed by others.

In studying the table presented, it is evident that the ratio of auditory to visual hallucinations varies considerably in different diseases. It occurred to me to contrast two groups with reference to this point. In the first group let us put mania melancholia and paranoia, a total of 160 cases. In this group we find auditory hallucinations in 127, or 79 per cent. of cases, and visual in 47 cases, or 29 per cent. In the second group let us put these diseases where we would expect more gross anatomical lesions, namely, general paralysis, organic brain disease, epilepsy and alcoholic insanity, — making a total of 61 cases. Here we find auditory hallucinations in 26 cases or 44 per cent., and visual in 18 cases or 22 per cent. Thus while there appears to be a falling off of visual hallucinations there is a much greater one in the auditory; and in the latter group visual hallucinations are (relative to the auditory symptom) much more frequent.

Does not the fact that auditory hallucinations are more frequent in the psychoses than in organic brain disease lend support to the view that auditory images are more necessary to thought than others? On assuming this view to be the true one and reasoning *a priori*, ought we not to expect that auditory images would be more readily aroused in these diseases where perverted mental action was an important feature? And in those diseases following coarser organic lesions might we not expect the various sensory regions to be more equally irritated and senses other than the auditory to be represented in hallucinations.

It would be interesting to compare such statistics with similar ones as regards dreaming.

The distinction between hallucinations and pseudo-hallucinations has been made recently. I need not explain that the latter refers to those hallucinations whose subjective character is recognized by the percipient.

As pseudo-hallucinations are much less apt to be followed by delusions and insanity, the question is at once suggested might not a previous education in the subject of hallucinations, illusions, etc., prevent in many cases the serious consequences of hallucinations now seen in many uneducated people.

I believe there are a considerable number of cases sent to asylums yearly where the whole trouble is based on the continuation of the distressing symptom of false hearing; which cases would under proper care — if they had previously been taught that such experiences are very common — have made a rapid recovery at home. On the other hand, I know there are cases where pseudo-hallucinations persist so long, and are so disgusting or harassing that the patient in time becomes a victim of melancholia. Nor is it likely that the degenerative psychoses would be affected permanently by the knowledge that hallucinations are subjective.

Clinical Department.

SHOCK FROM AN ELECTRIC WIRE.

BY F. W. JACKSON, M.D., WESTON, MASS.

P. R., of Weston, age twenty-two, weight 150 lbs., a well-developed, muscular fellow, while driving home from Waltham, Saturday night, August 3d, had an encounter with a "live electric-light wire." His horse's feet became entangled in a wire that had broken away from its pole connection and fallen across the street.

The horse finally extricated himself from the wire, and in so doing removed some of the insulating material, in sections of one inch, — two or three in all. R., in his attempts to remove the wire, probably seized it at one of the unprotected points, thus forming a perfect circuit. He was immediately thrown a distance of ten feet against the curb-stone, and then instantly to the middle of the street again, swaying back and forth three times. His hands were in contact with the wire about three minutes, when, from some unknown cause, the current suddenly broke, and he dropped to the ground unconscious, remaining so about ten minutes, then in a semi-conscious state fifteen minutes, after which was removed to my office.

I first saw him two hours after accident. Pulse 100, strong and bounding; temperature 100°; pupils dilated; headache; nervous and irritable; reflexes increased. Headache accompanied by insomnia continued for three days, after which time rapidly disappeared, and he resumed his work as railroad section-hand without any inconvenience, apparently none the worse from the shock. The palmar surfaces of both hands and arms were blackened from tips of fingers to a point midway between wrists and elbows, and were sensitive to touch, and on the least irritation the muscles would violently contract — disappearing on the second day.

Two days after accident the company's agent effected a settlement with him, which did in no way modify the convalescence, as he was totally ignorant of the results of coming in contact with a "live electric-wire," or electricity in any form.

The current was from a fifty-light Thomson-Houston arc machine, ampère current 6.8; the voltage was about 2,100 on that circuit at that time, it being a new three-braided electric-light wire, did not consequently allow the electric current to escape through. It being a wet night and raining heavily at the time, was undoubtedly the cause of his sustaining such a severe shock. The voltage passing through his body is wholly problematical; and it is my opinion that, had he been

acquainted with electrical appliances and the power of electricity, the shock would have been more severe and lasting, possibly terminating fatally. Treatment: quiet, rest, bromide potash.

Medical Progress.

RECENT PROGRESS IN OPHTHALMOLOGY.

BY MYLES STANDISH, M.D., OF BOSTON.

NUTRITION OF THE LENS, AND THE FORMATION OF CATARACT.

Magnus,[1] in an experimental study of nutrition of the lens and the formation of cataract by the means of saturation with grape sugar, naphthalin, or salt, draws the following conclusions concerning the nutrition of the normal lens:

(1) The nutritive processes are more active on the posterior than on the anterior half of the lens. This conclusion agrees with the observations of Deutschmann, who, in rabbits killed three hours after receiving a dose of iodide of potassium, found the iodide in the lens chiefly in the posterior sub-capsular layers. It agrees also with the clinical observations of Fuchs, who has noted that it is only in the posterior cortex that any considerable clearing up of traumatic opacity ever takes place.

(2) The chief nutrient stream enters the lens in a zone which lies parallel with and immediately behind the equator.

(3) A less important nutrient stream enters the lens in the zone lying immediately in front of the equator.

(4) The posterior pole also receives a nutrient stream, which is, however, of smaller amount that those entering the equatorial zones.

(5) The anterior pole appears to receive no nutrient stream from without.

(6) The equator itself receives no direct stream, but depends for its nutrition on the zones lying immediately before and behind it.

SIMPLE EXTRACTION OF CATARACT.

Greef,[2] in a report of 450 simple extractions of senile cataract in Professor Schweigger's University Eye Clinic, says that the extraction of senile cataract without iridectomy has so far obtained less of a foothold in Germany than in France, England and America; less, in fact, than it has actually deserved.

The operations were done under aseptic precautions, which included the cleansing of the skin around the eye with ether, as well as bathing both the upper and lower everted eyelids thoroughly with 1 to 5000 sublimate solution. The incision was made with the Beer's knife, partly with a downward flap entirely in the corneal tissue, and partly with an upward flap made in the same manner. If a prolapse occurs, if small, it may be safely left to itself; but if large, should be abscised in order to get rid of the astigmatism which it invariably excites.

The cases of loss embrace nearly five per cent. of the entire number. With regard to the prolapse of the iris, it is the opinion of our author that injuries after the operation are the most frequent causes, and that in this class must be included many cases in which the patient will not acknowledge that he has received any injury; it happens over and over again that, taking advantage of the absence of the nurse, the patient will leave his bed for some fancied reason and, not seeing anything, will easily run against obstacles of various sorts. In one case there was a prolapse of the iris in the patient, who bent over towards the floor on the second day, after getting out of bed against the strictest orders. Many patients will press upon the bandage violently with the thumbs. Where better care is taken and the patients are more reasonable, as in private clinics, prolapse of the iris is not found so frequent. Prolapse of the iris from traumatism through the section once already cicatrized, is rare after the fourth day; yet it occurred in one of these cases in a rather full-blooded woman, while bending over during a bath on the twelfth day.

Prolapse of the vitreous is one of the chief anatomical conditions that leads to prolapse of the iris, and when it may be expected, therefore, in high degrees of myopia, fluidity of the vitreous, etc., the operation iridectomy should be done. As to whether the prolapse of the iris is oftener seen after the upward or downward section, our author states that these cases offered no evidence one way or the other.

During the first cases eserine was used after the operation, as well as on the evening of the same day; but it was soon discovered that there was no need of it, and for that reason it was abandoned. It does not prevent prolapse of the iris, whilst it undeniably favors the formation of posterior adhesions. In Schweigger's clinic, much more care is taken in the first few hours after the new operation than the old. The patient must remain as quiet as possible for three full days, and the bandage is renewed on the second day, but the eye is not inspected. The eye is opened on the third or fourth day, and from thence onward atropine is instilled till the pupil remains of sufficient width.

SIMPLE EXTRACTION OF CATARACT.

Bull[3] sums up the advantages of a simple extraction as follows:

(1) If successful and without complication, it preserves the natural appearance of the eye, a central, circular and movable pupil.

(2) The acuteness of vision, with the astigmatism carefully corrected, is somewhat greater than after the old operation.

(3) Eccentric vision and orientation are decidedly better than by the old operation.

(4) Small particles of capsule are much less likely to be incarcerated in the wound, and thus act as foreign bodies and excite irritation.

(5) It is a shorter operation in point of time, by reason of the absence of an iridectomy.

(6) As there is no iridectomy, there is little or no hæmorrhage, and this may be considered a very decided advantage.

THE OPERATIVE TREATMENT OF HIGH MYOPIA BY EXTRACTION OF THE LENS.

Fukala[4] reports twenty-three cases in which he has operated on myopic eyes by repeated discissions; this being done in many instances as often as fifteen times,

[1] Van Græfe's Archiv.. vol. xxxvi, 4, p. 150.
[2] Archives of Ophthalmology, vol. xx, No. 3, p. 303.
[3] Transactions of the American Ophthalmological Society, 1890.
[4] Arch. f. Ophth., xxxvi, 2, p. 230.

and the results, as given in this report, are certainly encouraging. The oldest patient was twenty-four; the youngest eight; the myopia in all cases was as high as eleven dioptres, and in some as high as twenty dioptres. Only those with good visual acuity (J. 1) and free from choroidal or retinal disease were thus treated. In a small number of the cases an upward iridectomy was done before the lens was needled. The vision for distance was very much improved in all cases.

PSEUDO-MEMBRANOUS CONJUNCTIVITIS.

Fage,[5] in a short paper, records a case of conjunctivitis with formation of membrane, in which search was made by careful bacteriological investigations to solve the problem of the identity or non-identity of this form of disease and true diphtheritic conjunctivitis. The condition which was described by von Græfe as diphtheria of the conjunctiva, is of frequent occurrence in North Germany, but according to Fage, is rarely met with in France.

A membranous conjunctivitis does occur in the latter country, however, which was first described by Bouisson in 1846; but is not considered as really diphtheritic. In the form described by von Græfe, the cornea generally suffers and is often partially destroyed; but in the form described by Bouisson, although a definite false membrane is found on the palpebral conjunctiva, it is far less malignant, and usually disappears without leaving permanent signs in the shape of cicatrices. The question has often been mooted as to whether the two are not identical in origin and only different in degree. It is, of course, of some importance to be able to distinguish between the true conjunctival diphtheria and fibrinous inflammations, in the causation of which Lœffler's micro-organisms play no part. Our author's patient was a sickly child, fifteen months of age, who came under observation four days after the swelling began. There was, when first seen, a moderate swelling with redness of the lids, which were nevertheless ductile and easily everted. The upper palpebral conjunctiva on each side was covered by a gray false membrane, moderately thick, adherent to, but easily separated from the mucous membrane; the removal of this layer exposed a raspberry-like bleeding surface; both cornea were infiltrated, especially in the central part. No membrane could be discovered in the fauces; a few large mucous râles could be heard in the chest. The treatment consisted of a sublimate lotion (1 to 2000), iodoform ointment and atropine.

Improvement soon took place; July 6th the membrane had disappeared. Ulceration of the right cornea occurred and hypopyon formed, but after paracentesis the ulcer healed.

In the tubes of gelatine inoculated from the membrane, and kept at a temperature of 37° C., colonies were visible on the second day. These were of two varieties; one opaque and white, and the other grayish. One variety proved to be the streptococcus pyogenes; and the other the staphylococcus pyogenes albus; no species of bacillus was found in any of the cultures.

Fage considers that these results establish the non-diphtheritic nature of his case, and is of the opinion that a correct diagnosis can only be ascertained in the presence or absence of the bacillus of Lœffler, which is generally considered a characteristic of diphtheria.

[5] Arch. d'Ophthal., January and February, 1891.

A FORM OF XEROSIS.

Kollock[6] reports a rather peculiar form of this disease as prevalent among negro children in Charleston, S. C.

The conjunctiva has a dirty-white and yellowish-green hue, and that portion of the conjunctiva visible between the lids is darker than the rest, and generally thicker near the corneal margin.

The pigment is distributed well back into the retro-tarsal folds, but does not invade the palpebral conjunctiva. The ocular conjunctiva may be merely thickened and discolored, or it may be relaxed and flabby so that every movement of the ball throws it into folds or wrinkles about the cornea. Occasionally these folds are capped by the silvery scales which some writers have described as being diagnostic of hemeralopia, and indeed the parents of a few of the children have mentioned night blindness as the sole cause of bringing them for treatment. The edges of the cornea are always hazy and sometimes an ulcerating ring surrounds that body which has a bluish hazy sheen, due to a partially opaque state of the epithelium. The eye is not painful, nor is there any photophobia.

APPARENT DIFFERENCES OF DISTANCE DUE TO COLOR.

Basevi[7] has made the peculiar discovery that when different colors are placed upon the same black background in the same plane, they appear to be at different distances from the eye. At the distance of five metres, yellow seemed to be about one and a half centimetres and red about nine-tenths of a centimetre nearer than the blue on the colored background. These apparent differences changed, but according to certain definite laws.

BRAIN CENTRES GOVERNING THE IRIS.

Basevi[8] has made numerous experiments on dogs, cats, rabbits and pigeons to fix the seat of the centres governing the movements of the iris. According to the results of his observations, the centre for the sphincter lies in the posterior wall of the third ventricle in front of the corpora quadrigemina, and in the medulla oblongata; and secondary centre lies in the ciliary ganglion. The centre governing the dilatation of the pupil is found between the lower part of the last cervical vertebra and the first two dorsal vertebræ, and in the posterior part of the anterior pair of the corpora quadrigemina, and at the posterior pair. A second centre lies in Gasser's ganglion. Our author found no difference between mammals and birds in regard to these centres.

CAUSE OF THE LIGHT STREAKS AS SEEN UPON THE CENTRE OF THE RETINAL VESSELS.

Davis[9] has repeated Loring's experiment by passing through a glass cylinder a column of fluid from a warm-blooded animal, making the analogy between the artificial eye constructed by Loring and that of the human eye complete, and has gotten in every detail the same phenomena with the actual warm-blood column that Loring did with the carmine solution, thus disarming the criticism of Donder's, and establishing the fact that the light streak as seen upon the

[6] American Ophthalmological Society, 1890.
[7] Arch. d'Ophthal., vol. x, 4, p. 340.
[8] Annal di Ottalmol., vol. xix, 2, p. 144.
[9] Archives of Ophthalmology, vol. xx, 1, p. 44.

centre of the retinal vessels was due to the refraction of the reflected light.

RESECTION OF THE OPTIC NERVE.

Sheffels [10] reports forty-one cases of resection of the optic nerve by Dr. Pagenstecher. Dr. Sheffels was resident surgeon of the Eye Hospital at Wiesbaden. Pagenstecher adopted this operation on account of the troubles which attend the wearing of the best-made artificial eye, especially among the poorer class of patients, and on account of the moral effect of the operation, and also from the fact that an enucleation militates against the man in the labor market.

The simple operation of neurotomy which was practised for a time by the late Alexander Pagenstecher, was abandoned later on account of the reunion of the divided nerve ends, and replaced by resection. The first cases tried in this manner were those in which the lost eye was painful, and the success which followed led to its employment in those cases in which there was reason to fear that the lost eye might lead to sympathetic inflammation in the second eye. In 15 cases the blind eye was the direct cause of suffering, — secondary glaucoma, irido-choroiditis, detachment of the retina, cyclitis, etc. In seven of these 15 cases it was the cause of sympathetic irritation of the sound eye, and this disappeared after the operation.

In 26 further cases, sympathetic inflammation of the other eye was feared, either in a shrunken globe after perforation, or recent injuries involving the ciliary body, cornea, or iris; by percussion caps, iron, stone, etc. Total anæsthesia of the cornea was always present immediately after the operation, but was not permanent. The margin of the cornea, at first, and the remainder after a longer period, generally recovered a subnormal degree of sensibility. The pupil, in the absence of synechiæ, generally acquired a maximum dilatation. The longest piece of nerve removed measured 15.5 millimetres. It was not possible often to remove so much in the presence of inflammatory adhesions around the globe. A simple optico-ciliary neurotomy is not a sure preventive of sympathetic inflammation, and the author reports a case from Pagenstecher's practice in addition to the one reported some time since by Leber.

From the results obtained, the author draws the following conclusions:

In all cases in which the blind eye is the sole cause of suffering, or in which the sympathetic irritation of the fellow-eye exists, but when sympathetic inflammation is not to be feared, resection of the nerve is preferable to enucleation.

In all cases in which sympathetic inflammation is to be feared, it is now desirable that resection should be freely tried as a substitute for enucleation, in order that its efficacy may be definitely determined; and, should sympathetic ophthalmia occur in a single instance after the removal of a sufficient portion of the nerve, at an early period, as has twice happened after a simple neurotomy, then for this class of cases the operation must be abandoned.

SHADOW-TEST IN THE DIAGNOSIS OF AMETROPIA.

Beaumont,[11] in a monograph of thirty-eight pages, an author who has evidently paid great attention to the subject, gives an account of the practical use of the shadow-test, which term he prefers to retinoscopy, and wisely warns his readers of the danger of using the shadow-test to the exclusion of other more important methods of examination, and also emphasizes the necessity of ascertaining the refraction at the macula, and not at other portions of the fundus oculi; and gives some tables of figures as to the differences in refraction at the yellow spot and at the periphery.

In regard to the use of mydriatics in cases in which the shadow-test is to be used, the author differs from most authorities in that he considers it more essential to paralyze the accommodation in myopes than in hypermetropes, but there is some reason for this opinion, inasmuch as there is danger of over-correction in myopia, whereas in hypermetropia the error, if there be one, will be one of under-correction.

PERSISTENT HYALOID ARTERY.

De Beck [12] in a rather elaborate complication of all recorded cases, groups persistent hyaloid arteries under the following heads:

Group A, in which are found upon the optic disc little irregular shreds or bands of connective tissue. These are glistening white, at times almost transparent, only faintly softening the vessels that may run beneath them; and again, are thicker and more opaque, either completely hiding the vessels beneath, or allowing them to shimmer faintly through. In a strict sense, these are not obliterated vessels, but are remnants of an obliterated vessel, the hyaloid.

Group B. A small series of cases have been reported in which a glistening white membrane was found covering the disc to a greater or less extent, and in most cases encroaching somewhat upon the adjoining retina. This membrane usually presents considerable thickness, and either completely hides the vessels, or obscures them to a more or less degree. Our author thinks these membranes are remains of the adventitia of the embryonic hyaloid vessel.

Group C. Also a small group of cases where the remnant of a hyaloid vessel was found occurring as a cystic expansion upon the disc. These show rounded or oval. They have a characteristic translucent tint, and are very suggestive of fluid contents, and are pearly gray or steel, bluish in color.

Group D. Quite a group of cases have been reported where the disc is more or less covered and hid by the irregular mass of connective tissue. This group presents the greatest variability, and forms the most general connecting link between the other groups, varying from bands and membranes to other cases in which it affiliates with the group of cystic remains, and may project forward considerably into the vitreous.

Group E is the largest group of all, and is characterized by a strand arising from the disc and passing downward for a greater or less distance, and terminating by an end which floats free in the vitreous. Usually the origin of the strand can be traced clearly to the central artery, although some take the origin from a branch upon the disc. The length is, of course, variable; they may sub-divide into two or three branches, and may terminate either in kind of knob-like swellings, or in fine fibrillæ.

Their color varies from grayish, bluish, brownish to black — to some extent modified by the method of illumination.

Group F is a small one which resembles the pre-

[10] Klin. Monatsbl. f. Augenheilkunde, June, 1890, p. 197.
[11] Ophthalmic Review, London, August, 1890.
[12] American Ophthalmological Monographs.

vious one in having a strand springing forward from the disc, and ending free in the vitreous, but differs in presenting in addition a distinct remnant at the posterior pole of the lens, indicating the former attachment of the artery at this point. This attachment is not always central.

In Group G the hyaloid remnant retains its attachment at its point of origin upon the disc, as well as its distal attachment at or near the posterior pole of the lens.

Group I includes a few cases in which the only vestige of the hyaloid artery is a filament attached to the posterior pole of the lens, projecting back and ending free and movable in the vitreous; the fundus is normal, and the vitreous clear.

The last group is one in which there remains as a vestige of the hyaloid system, a delicate, nearly transparent tubular sheath, passing through the centre of the vitreous from the disc to the lens. This is regarded by some as a persistence of the delicate membraneous lining of the canal of Cloquet, through which the hyaloid artery runs, and by others, as the remains of the outer sheath of the vessel itself. Sometimes the sheath fades away towards the disc, and only a thin, pointed extremity fixes it at this point; and even this may fade away, so as not to be visible to the ophthalmoscope. Anteriorly the sheath may fade away in the same manner, and not reach the posterior surface of the lens. There is little doubt but that in some instances, at least, this canal remains patent during life.

Galezowski notes a case where a very fair example of the persistence of the posterior portion of this canal had been observed in an infant; three years later this had dwindled to a few shreds floating at the disc. From this he concludes that this condition is quite frequent in infancy. This conclusion is hardly warranted, however, from a single observation.

THE CONJUGATE MOVEMENTS OF SQUINTING EYES.

Brown,[10] in a short article, draws attention to the fact, that, under ordinary circumstances, the centre for conjugate movements acts in the same manner in squinting eyes as in those with parallel axis; but, that when once the limit of internal has been reached by one eye, the external rectus of the fellow eye is able to exert an independent and supplementary action. This action continues only so long as the habitual angle of the visual axis is exceeded. When it is re-established, conjugate movement is re-established also. Beyond this, it indicates that the internal rectus is capable of being elongated by the power of the external, and that there is no actual shortening of the muscle as supposed by some. This is demonstrated in the following:

Supposing the left is the squinting eye; let the patient fix an object, such as a pencil, held in the mesial line. Let this be moved to the temporal side till the extreme lateral excursion of the fixing eye is attained; the left eye will, of course, be now turned towards the nasal canthus; if now the object of fixation be slowly moved from the right to the left side of the patient, it will be found that the fixing eye (right) travels as far as the mesial line before the left begins to move in concert; that is to say, the fixing eye moves, but the squinting eye remains stationary.

When the right eye has reached the mesial line, then both eyes move in due association towards the left.

[10] Ophthalmic Review, August, 1890, p. 221.

Reports of Societies.

BOSTON MEDICO-PSYCHOLOGICAL SOCIETY.

H. C. BALDWIN, M.D., SECRETARY.

MEETING of March 19, 1891.

DR. EDWARD B. LANE read a paper on

HALLUCINATIONS IN THE INSANE.[1]

DR. TUTTLE had no doubt that a person could educate himself to hallucinations and illusions, and cited the case of a woman who lost her child, and went to mediums in order to communicate with the child. She then began to try to communicate with the child by herself. She would go off alone, and lie quiet for hours, listening, until she finally developed hallucinations of hearing. She is now in an asylum with persistent false hearing. He said that if these patients' attention can be taken up, the hallucinations of hearing stop. Change of environment and occupation offered the best chance of recovery in these cases.

DR. PRINCE thought that most of the mediums were developed in the way Dr. Tuttle suggested. They educate themselves to see visions and to have trances. When going to sleep but while yet awake, one can often see faces and things distinctly and apparently objectively. Regarding patients with hallucinations of digestion, he spoke of an insane patient with a series of neurotic symptoms connected with digestion, where there really was no digestive trouble. This was the result of the grouping of a lot of nerve centres (association neurosis) from past true digestive attacks.

DR. DEWEY spoke of a patient with folie circulaire who was seven times in the South Boston Hospital. In six previous attacks the patient had no hallucinations. In his last attack the patient had hallucinations of sight and hearing.

DR. KNAPP thought this was an instructive study, and was surprised to find that hallucinations were so universal in cases of different forms of insanity. The greater prevalence of hallucinations of hearing was most interesting, and as the writer said, was explained by the fact that visual was later than auditory representation. Dr. Tuttle's remarks emphasize the importance of studying the earliest manifestations of hallucinations which may begin in health.

DR. MOULTON spoke of a case where hallucinations of hearing had persisted for ten years. The patient recovered by means of diversion and occupation.

DR. STEDMAN said that it was unusual to have hallucinations in cases of folie du doute.

DR. FISHER spoke of the difficulty of deciding about hallucinations in the case of criminals whom one sees but a few times. The existence of hallucinations would be very important in the evidence. He spoke of a patient with monomania of suspicion who had Ménière's disease and who had false hearing. The false hearing associated with Ménière's disease was interesting and unusual, and suggested the question whether the disease was the cause of the mental state. Later authorities state that vertigo may be central with no disease of the semicircular canals. In one of his patients where there were vertigo and forced movements, the autopsy showed no Ménière's disease.

DR. GORTON spoke of the case of a man who could not work so well as usual in consequence of overwork, but recovered after resting. He broke down a second

[1] See page 267 of the Journal.

time, and became convinced that other people felt about his work as he felt himself. This was not the case. Six months later he developed the feeling that people were talking about him. When he saw two people together for whom he worked, he heard them talking about him. The voices faded when they went away. Later, when other people came together and talked, he also heard them talking about him. At first the talk was logical; later it became childish and silly. Ultimately the patient developed hallucinations and delusions which were classical in character.

Dr. Tuttle said that when a man heard words, he thought that usually there was some sound, and he had come to look upon these auditory hallucinations as usually associated with sound. He cited the case of a patient whose footsteps talked to him. When the attendant walked, his footsteps talked also. The patient did not mind the talking of his own footsteps, but did mind the talking of the attendant's footsteps.

NEW YORK STATE MEDICAL ASSOCIATION. FIFTH DISTRICT BRANCH.

Seventh annual meeting, held in Brooklyn, May 26, 1891, the President, Stephen Smith, M.D., in the chair.

MORNING SESSION.

After the disposal of some preliminary business matters and the reading of biographical sketches of Fellows deceased during the year, Dr. Samuel E. Milliken read a paper on

THE TREATMENT OF HYDROCELE BY CARBOLIC INJECTION VERSUS THE RADICAL OPERATION.

The cutting operation of Volkman, and its various modifications, he said, while usually successful in relieving the hydrocele, requires the use of an anæsthetic, and necessiates confinement to bed for a week or more if suppuration occurred. The method of Levis, by carbolic injection was practically painless, confinement to bed was in no sense essential, and unless an inordinate amount of carbolic acid, more than thirty minims was used, sloughing ought never to occur. The simplest and most efficient apparatus for the purpose was a small trocar and a hypodermic syringe. After thorough evacuation, the syringe was screwed on to the canula, and the injection could thus be made without a single drop of the acid coming in contact with the skin of the scrotum. When from five to 25 minims of pure carbolic acid was distributed over the whole serous surface (two or three minims in each place) nothing more than a sense of warmth was experienced by the patient. After removal of the canula slight kneading of the sac might be made to insure coating of its walls with the irritant.

Of 54 cases thus treated by Dr. Milliken at the Hospital for Ruptured and Crippled, nine were never seen after the injection, five paid one visit within the first week only, and four are at present under observation. All the remaining 36 cases could be set down as completely cured; and of these, 27 had one injection, four, two injections, and five, three injections. In no case had sloughing occurred, and not one of the patients lost more than 24 hours from business. From two to six weeks were necessary for absorption of the exudation to take place, and thickening of the sac might remain much longer than this. The conclusions reached by the author were as follows:

(1) Carbolic injection is a safe method for the cure of hydrocele.

(2) It is practically painless.

(3) The patient can attend to business without more than one day's delay.

(4) The disagreeable effects of an anæsthetic are avoided.

Dr. Wm. R. Ballou said that Hare had collected a large number of cases in which great destruction of the tissues, and one case in which fatal poisoning, was caused by the injection of iodine, and he thought carbolic acid was greatly preferable to the latter. Dr. Fluhrer was accustomed at the New York Polyclinic to inject a large quantity of carbolic acid (from 60 to 80 minims), but it would seem hardly necessary to use such a large amount when such excellent results as those reported by Dr. Milliken could be obtained with small injections.

Dr. Wm. T. White said that while he had never seen any of the bad results from iodine which had been mentioned, it was a fact that in cases where considerable inflammation was set up by the latter, it was necessary for the patient to remain in bed for two or three days, and, therefore, if this could be avoided by the use of carbolic acid it was certainly a point gained.

Dr. Milliken said that in regard to iodine he was not so much in fear of the sloughing liable to be caused by it, as of iodine poisoning. The painlessness of carbolic acid he thought was a great point in its favor. In the paper, he said, he had omitted to state that he usually directed a suspensory bandage to be worn for the first two weeks, and that he employed for the injection equal parts of glycerine and carbolic acid, a perfect solution being highly desirable. He preferred to use 10 to 20 minims, and repeat the injection a second, or even a third time, if necessary, rather than to use a large quantity of the acid a single time. In cases where the trouble returned it was always noticeable that the hydrocele was never as large as it had been originally.

Dr. Wm. R. Ballou read a paper on

ACUTE PROSTATITIS AND PROSTATIC ABSCESS.

In one thousand cases of urethritis in various stages seen in hospital and dispensary practice during the past five years, he said he had observed only three cases of prostatitis resulting in an abscess of the gland, though many of a milder grade. In the more severe form of the affection the termination might be either in resolution or in prostatic abscess. Many distinct foci of suppuration were sometimes present, and perforation and discharge might be either into the urethra, the rectum or the perineum. The most frequent cause was extension of inflammation from the anterior urethra; and among the other causes were cold, traumatism (including the use of instruments), and irritating urethral injections.

Having described the symptoms in the milder form, he said that in the severer form the temperature might rise to 104° or 105°. Swelling, pain and throbbing in the rectum were marked, and defecation might be painful or much interfered with. As the formation of pus came on, all the symptoms became intensified, and even general movements of the body were accompanied by agonizing pain. There was also a sudden accession of fever, usually with rigor and sweating. More or less

complete retention of urine might be present; but prostatic fistula or extravasation of urine were rare, owing to the fact that the surrounding tissues were very tense from cellular infiltration. Having spoken of the prognosis, he said that in the beginning of the attack all local urethral medication was to be stopped and absolute rest in bed enforced, if possible. A brisk purge has advisable at first, and later on laxatives were to be given at intervals. Such alkalies as citrate of potassium (ten grains) or liquor potassæ (five drops), given every three hours with tincture of hyoscyamus (two drachms), he had found most efficacious in diminishing the pain and frequency of micturition; and he advised that they should be kept up during the whole course of the disease.

Local remedies to the perineum, such as leeches, hot fomentations, fly blisters and cantharidal collodion, as well as hot hip-baths, were often of service. Morphia internally or suppositories of opium and belladonna were sometimes required by the intense pain present. If retention of urine occurred, a soft catheter should be passed after irrigating the urethra with a mild solution of permanganate of potassium. Incidentally, Dr. Ballou said that in ordinary acute urethritis he had obtained more prompt and satisfactory results with permanganate injections than with almost any other, and that he now used this treatment almost exclusively. After drawing off the water, the bladder should also be washed out. In some cases of retention a metallic instrument might be required; but it should be used with extreme caution, and aspiration above the pubes was sometimes preferable.

If abscess formed, free incision was called for, and even if fluctuation was not distinct, a free and deep perineal or rectal incision was afterward followed by the most beneficial results. After evacuation, under antiseptic precautions, the abscess should be washed out with bichloride solution, and a large drainage-tube inserted. Passage of a sound into the bladder, in the hope of rupturing the abscess into the urethra had been sometimes recommended.

In conclusion, Dr. Ballou gave the notes of three cases of acute prostatic abscess treated by him. In one the abscess had discharged spontaneously into the rectum before the patient came under observation; in another it was tapped with a trocar through the rectum; and in the third an incision was made from the rectum (after the introduction of a Sims rectal speculum).

The PRESIDENT said that in the earlier stages he thought it preferable to make the perineal rather than the rectal incision, on account of the danger with the latter of the opening remaining permanently and also of infiltration of the tissues. If the case were seen later, and the abscess was evidently pointing towards the rectum, he would perform rectal incision. He regarded the passage of a metallic instrument into the bladder with the idea of causing rupture into the urethra as a dangerous and unjustifiable procedure, and referred to a case where this was done, which terminated fatally in consequence.

THE TREATMENT OF GONORRHŒA.

In reply to a question, DR. BALLOU stated that he was in the habit of using in acute urethritis bi-hourly injections of the strength of one-eighth to one-tenth of a grain of permanganate of potassium to the ounce of distilled water; two syringefuls being employed at each injection. Internally he usually gave some alkalies, and if the trouble were deep seated, hyoscyamus in addition. After from four to eight days sulphate or acetate of zinc (one grain to the ounce), was added to the injection.

DR. WM. MCCOLLOM said that it might be objected to such a weak permanganate solution that it was scarcely germicidal. He himself had generally used the permanganate in the strength of one grain, or, all events, half a grain, to the ounce.

DR. BALLOU thought that the gonococcus at the present time was not regarded as of quite as much importance as formerly. While he used the very weak permanganate solution in the first stage, he often increased the strength to one-sixth of a grain to the ounce afterwards; but this was as strong as he ever employed it.

DR. PRITCHARD said that he had formerly used the permanganate, but he found that while with this injection, as with many others, the discharge disappeared for a time, it almost always came back again.

(To be continued.)

Recent Literature.

The Vest-Pocket Anatomist. By C. H. LEONARD, A.M., M.D. Fourteenth Revised Edition. Containing Dissection Hints and Visceral Anatomy. Detroit: The Illustrated Medical Journal Co.

It is the boast of the reviewer, repeated yearly, and as often made good, that he can "pluck" any student who trusts to compendiums. The book before us does not call for further notice. T. D.

Auscultation and Percussion. By FREDERICK C. SHATTUCK, M.D., Professor of Clinical Medicine in Harvard University; Visiting Physician, Massachusetts General Hospital, etc.

This little book of 120 pages is very concise and remarkably well written. Seven plates of outlines at the beginning of the book add much to its value. The first fifty-six pages are devoted to the lungs. Among its many excellences we notice with pleasure what is said about palpation in the first chapter. The views expressed in the page devoted to the merits of gentle percussion will also meet the approbation of the modern teacher. Much of the rest of the book is devoted to the heart and aorta, while the last chapter deals with the physical exploration of the liver, spleen and pancreas. In conclusion, we may add that the different subjects are handled with great clearness and discrimination, and that the book more nearly attains the ideal of a compendium than any we have. It is to be unhesitatingly recommended to physicians and students alike as the best of its kind.

APPOINTMENTS IN FOREIGN UNIVERSITIES.— Professor Schauta, of the University of Prague, has been appointed to the Chair of Midwifery, with charge of the First Obstetrical and Gynecological Clinic, in the University of Vienna, in place of the late Prof. Carl Braun. Professor Löffler, of Griefswald, has been invited to succeed Professor Rubner in the Chair of Hygiene in the University of Marburg. Professor Rubner has gone to Berlin to take the position formerly held by Professor Koch.

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ON THE ROLE OF ALCOHOLISM IN THE ETIOLOGY OF GENERAL PARALYSIS.

At the Congress of Mental Medicine held in Lyons, August 3, 1891, the subject which elicited the most discussion was that of the rôle of alcoholism in the etiology of general paralysis.

Rousset, who opened the discussion by an exhaustive report, concluded that predisposition is equally as important a pathogenic factor as alcoholism; there are, however, exceptional cases where, apart from any hereditary influence, alcoholic excesses may determine at length those processes of connective tissue proliferation and cerebral sclerosis, which find expression in paralytic dementia.

Magnan defended the view propounded in his well-known work, namely, that chronic alcoholism leads habitually to dementia and sometimes to general paralysis; this view being supported by arguments borrowed from experimental physiology on the one part, and from clinical observation and pathological anatomy on the other.

Experiments on animals subjected to chronic alcohol poisoning, give as results thereof, steatosis of the liver and kidneys, sclerosis of the pericardium, of the meninges, and of the posterior columns of the cord. In man, similar lesions are noted as the effect of prolonged alcoholic excesses; the morbid process localizes itself in accordance with individual predisposition, and when it affects the cerebrum, it determines the symptoms of dementia.

Regis stated that he had formed his opinion from data obtained in the private asylum of Castel d'Andorte. He finds that in the middle classes of Gironde cases of general paralysis and of alcoholism are in absolutely inverse proportion, and that in this region, at least, alcoholism has no influence on the production of general paralysis. On the other hand, almost all cases of general paralysis are old syphilitic patients; and this leads him to assign an important rôle to syphilis as an etiological factor in general paralysis.

Marié, of Paris, regards ordinary toxicological agents (mercury, lead, opium) as factors of no account in general paralysis. Nor do the infectious poisons (those of acute diseases) seem to have any influence in the genesis of this disease. Syphilis, on the contrary, as a chronic infectious process, has been found to be pathogenic in sixty-five per cent. Alcoholism and syphilis combined, associated with heredity, seem to form a sort of triad with predominant etiological influence. So impressed is this authority with the importance of heredity, that he regards general paralysis rather as a degenerative affection of the race than of the individual.

Combemale, of Lille, stated that he had induced in dogs the characteristic symptoms and lesions of general paralysis by dosing them with daily quantities of alcohol, introduced by the stomach tube; these experiments were made in conjunction with Mairet. These are his conclusions:

(1) Chronic poisoning by alcohol gives rise in the dog to outbreaks of delirium characterized especially by ideas of fear with hallucinations.

(2) To these symptoms which generally mark the onset of the psychical troubles, are shortly added mental enfeeblement and muscular disorders, both ataxic and paralytic, which begin by the posterior extremities or at least have their maximum there, and rapidly become general, as in general paralysis.

(3) At the autopsy of the animals are found the principal lesions which characterize general paralysis; diffuse-meningo-encephalic inflammation and vascular dilatation.

(4) To the nervous disorders of the limbs are to be added certain choreiform tremblings of the head and neck, and modifications of character and of instinct; thus an animal of snappish, churlish disposition would become mild-mannered and tolerant of excitation.

These physical and mental disturbances were thought to justify the diagnosis of general paralysis of special form.

Christian thought that it would not do to give to the morbid accidents noted in the dog by Combemale the name of general paralysis. They simply show that alcohol causes in the dog delirium and paralysis. With this opinion Mairet coincided. He believes that alcohol may determine in man the appearance of a special form of general paralysis, quite distinct clinically and anatomically, from ordinary general paralysis.

Magnan did not dispute that alcoholism gives to general paralysis a special physiognomy, which results from the distribution of the lesions. But this is no reason for creating a special form of general paralysis.

Charpentier affirmed that hospital statistics have proved that it is in alcoholic patients that general progressive paralysis acquires its maximum of frequency. In the last five years he has found at Bicêtre, eighty-three cases of confirmed alcoholism out of one hundred and thirty-five victims of general paralysis. If general paralysis of alcoholic origin takes on a special form, this is due to the nature of the intoxicant, its

affinities for particular tissues, and the kind of irritation it provokes.

From an anatomo-pathological point of view, alcohol-poisoning may produce the entire symptomatic complexus known as progressive general paralysis, and at the autopsy one may fail to find the characteristic lesion of general paralysis, that is, diffuse interstitial sclerosis. *Per contra*, there is no diffuse interstitial sclerosis without general paralysis, while there may be general paralysis without this anatomical lesion.

From the foregoing discussion, it will be seen that pathologists have not yet, with sufficient precision, defined the pathological anatomy, the symptoms and the course of that morbid entity designated under the name of general paralysis, and till this is done, as was remarked by one of the speakers at the meeting, the question of the rôle of alcoholism in the etiology of general paralysis cannot be satisfactorily answered.

PERMANENT PUBLIC BATHS FOR THE POOR.

IN the latter part of August there were opened, with simple ceremonies, the first permanent public baths in the city of New York. The building is situated on Centre-Market Place, in the midst of the east-side tenement district, about half-way between Broadway and the Bowery, and it has been erected at a cost of about $25,000 exclusive of the land, which was kindly given for the purpose by the New York City Mission Society. The project has been carried out by the Association for Improving the Condition of the Poor; and on the occasion of the opening of the baths an address was made by Mr. John Paton, President of the Association, and a poem read by Dr. Gouverneur M. Smith, one of the principal movers in the work. The building is attractive in appearance, and its accommodations are capable of providing nearly one thousand baths a day. The departments for the two sexes are entirely distinct, with separate entrances, so that males and females can bathe at the same time, and the baths are to be kept open for fifteen hours a day, winter and summer.

The system adopted is that which has been in use for some time in Vienna and other European cities, namely, the shower or rain-bath plan. Adjoining each compartment is a small dressing-room, and most of the baths are furnished with warm as well as cold water. Each bather is provided with a towel of ample size and a small cake of soap, and he is expected to carry home the latter. The price for a bath is five cents, but provisions have been made by which the very needy can secure their baths for nothing. One hundred and twenty-five people are reported to have availed themselves of the baths the first morning they were opened. These new "People's Baths" are the direct result of a movement commenced some time ago by the medical profession, and the Association for improving the Condition of the Poor is to be congratulated on having carried it out to so happy a consummation.

STATE CARE OF EPILEPTICS.

THE Department of Health of the American Social Science Association occupied itself at the meeting at Saratoga last week with a consideration of epilepsy, insanity, hypnotism and hydrophobia.

Dr. F. Peterson, of New York, chairman of the department, was not present, but contributed a paper on "State Care of Epileptics." This subject was discussed in a paper by Dr. W. N. Bullard, published in the JOURNAL, January 8, 1891, and at a meeting of the Clinical Section of the Suffolk District Medical Society, reported in the same issue. Dr. Peterson agrees with the views then advanced as to the need of special institutions — he suggests one in each State — for the care of epileptics. He estimates that there are more than 100,000 epileptics in the United States, and that there are at least 2,000 in the almshouses and asylums of the State of New York. He hopes New York will follow the example already set by Massachusetts, Ohio and California in making separate provision for these unfortunates.

MEDICAL NOTES.

CASE OF LUPUS UNDER TREATMENT WITH TUBERCULIN SINCE FEBRUARY. — The medical officer in command at Cincinnati, under date of August 20th, reports as follows to the Surgeon-General of the Marine-Hospital Service: "I have the honor to inform you that the use of tuberculin has been discontinued in the case of lupus of seventeen years' standing, transferred from Washington, D. C., to this station, for a continuation of treatment with tuberculin, commenced by Assistant Surgeon Geddings, February 11, 1891. The destruction of tissue by advancing ulceration and sloughing was more marked in the last fortnight of treatment than at any time during the entire period of the existence of the disease. In view of the condition of the lupus patch, it was deemed advisable to abandon the use of tuberculin."

THE CENSUS OF CANADA. — Canadians are much disappointed over the result of the census. The enumeration gives the Dominion 4,823,344 inhabitants, an increase of 498,534 in the decade, or rather more than eleven per cent. Most of the gain was made in the Western provinces, in Ontario, in Manitoba, and in the newly developed country along the Pacific coast. Thus Toronto, which had 96,196 inhabitants in 1881, now is credited with 181,220; Winnipeg has grown from 7,985 to 25,642; Victoria, British Columbia, from 5,925 to 16,841, while Vancouver, which was only a city on paper in 1881, now has 13,685 inhabitants. Hamilton, Ottawa, London and Kingston all report large gains, and are now considerable cities, Hamilton leading with 48,980, closely followed by Ottawa with 44,154. In the Province of Quebec the greatest gain is made by Montreal, which has a population of 216,650, against 155,237 in 1881. Quebec has 63,090 inhabitants against 62,446 in 1881. In the Maritime Provinces the loss of population is most

marked, St. John's population has declined from 41,353 to 39,179. Eight of the nineteen electoral districts in Nova Scotia have lost population. The same return is made for eight of the fifteen New Brunswick districts. There are three districts in Prince Edward Island, one of which is returned with the minus sign. Halifax has gained 2,456 inhabitants, having now 38,556.

BOSTON.

James J. Minot, M.D., of Boston, has been nominated by Gov. Russell, trustee of the Massachusetts Hospital for Dipsomaniacs.

Legislative Regulation of Embalming. — At the tenth annual meeting of the New England Undertakers Association held in Boston, September 2d, Medical Examiner Thomas M. Durell, of Somerville, addressed those present in regard to the bill presented last year to the Legislature for the regulation of embalming. He recommended co-operation between medical examiners and undertakers. He thought that a law could be framed that would be for the interest of both and the public as well. He suggested the appointment of a committee of five to meet a similar one from the medico-legal society, and to draft a bill for presentation to the Legislature, and see that the measure passed. His proposition was adopted. Mr. A. E. Mann, the Association's secretary, spoke of the personal work done by the Massachusetts undertakers against the passage of the anti-embalming bill, and advocated the formation of a State association, in addition to that which includes the six New England States.

Mr. C. B. Dolge, of Westport, Ct., read a paper on "Embalming as a Fine Art." He said, "There is no question which demands so much attention from undertakers as the art of embalming. Through your Association we have been able to call the attention of doctors, lawyers, legislators and the public to yourselves and you will derive great benefit from it. Embalming is an art which is most difficult of mastery — not so easy as the manufacturers of some new fluid which they desire to sell would have you to believe. There are about 14,000 undertakers in the States, of which number only about half do more or less embalming. This is a small showing, and, because so many have but a superficial knowledge of the art and frequently fail, all good embalmers suffer." He spoke of the work of the United States College of Embalming, with which he was connected. It teaches all that is deemed necessary for a clear understanding of the human body and its anatomy as far as is needed to do the work intelligently and correctly. The study of chemistry was not considered necessary, as there were plenty of standard fluids, manufactured by responsible firms that could not afford to put an inferior fluid on the market. A good embalmer readily discovers which fluid is the better. He particularly emphasized the necessity of careful instruction in embalming.

The president, after this essay, announced the following committee on legislation: Messrs. Lawrence Reed, A. E. Mann, George Waterman, George N. Hopkins and Oliver Walton. It was then decided to have a committee of one from each State to look after legislative matters, and President Foster appointed as this committee: E. A. Brophy, of Maine, H. B. Knowles, of Rhode Island, E. D. Ward, of New Hampshire, C. W. Hills, of Connecticut and L. E. Cabot, of Vermont.

NEW YORK.

The Death-Rate.—The report of Dr. Nagle, Deputy Registrar of Records of Vital Statistics, for the week ending August 29th, shows a slight increase in the death-rate. The number of deaths was 826, representing an annual death-rate of 25.52 per thousand of the population against 773 and 23.89 the week previous, and 791 and 24.43, the average for the corresponding period during the past five years. The deaths from violence, however, which have averaged 32 per week since 1885, were increased to 107 by the Park Place disaster; and but for this the mortality of the city would have been under the average. There is some reason to suppose that an increase in the number of cases of typhoid fever reported may be due to the contaminated condition of the Croton water-supply.

Pollution of the Water-Supply.— The Board of Health is at present engaged in a careful examination of the existing sources of pollution along the Croton water-shed, and at its last weekly meeting adopted a resolution calling upon the State Board of Health to report to the New York City Board the names and residences of all persons now ill with a communicable disease, and those who may hereafter become ill of such disease, who reside on the Croton water-shed; also to report at once all deaths occurring on the Croton water-shed, with the name of the disease and the residence of the deceased.

Insufficient Accommodation for the Insane. — The overcrowded condition of the Brooklyn public insane asylum at Flatbush, where 1,400 patients are forced to occupy quarters intended for 900 at the most, and where even the damp cellars have to be used to lodge the unfortunate inmates, was the subject of an official complaint by the Charities' Commissioners to the Kings County Board of Supervisors on August 27th. Their statement showed that the main reason for this condition of affairs was the failure to complete the structures in course of erection at the county farm at St. Johnland.

Miscellany.

THE PHYSIOLOGICAL ACTION OF KOLA-NUT.

Dr. Kotliar,[1] wishing to elucidate the action of kola-nut, which, as is well known, has been recommended for increasing the power of the body to undergo a severe strain of work, has made a series of observations in Professor Manassein's clinic in St. Peters-

[1] Wratsch, No. 19, 1891.

burg, on the alteration of the chemical processes of the body when under the action of the drug. The observations were made on seven healthy young men, each being observed for two consecutive periods of five days. In some the drug was given during the first period, and the subject was kept at rest from work. In others the subjects worked hard, and the drug was given during the second period. The quantity of powdered kola-nut taken per diem was a drachm. From careful analysis of the food and excreta, it was found that, under conditions both of rest and work, kola increased the assimilation of phosphorus and sulphur. That of chlorine was increased during rest, but was not altered by kola under conditions of work. The metamorphosis of chlorine was diminished by kola both under conditions of rest and work, especially in the latter case. The metamorphosis of phosphorus was diminished both at rest and at work, but more especially during rest. The same may be said of sulphur. Finally, the breaking up of phosphorus and sulphur compounds both during rest and work, as compared with that of nitrogenous compounds, was diminished.

MISTAKES ABOUT BEARINGS.[1]

MISTAKES in orientation — sometimes of the most puzzling character — are usually the result of some incidental and temporary bewilderment, and may under peculiar circumstances overtake any one. Some instances have been cited by Sir Charles Warren in which they are chronic and may afflict even the best-informed persons. Erroneous conceptions formed by children as to distances and positions may grow up with them undetected till near maturity. Then, when the discovery is made, it is too late to apply any better remedy than to recognize the error and make allowance for it when possible. Cases are cited of a person whose ideas of certain parts of London were all inverted; of another, who placed Paris north of London; of thirty well-informed young men, "about eighteen were under the impression that, while the sun rises in the east, the stars rise in the west, from having learned that the sun has a proper motion among the stars; and the author believes that there are few educated men who have not grown up with some curious errors with reference to geographical facts, which have bothered them all their lives, and which they have found it to be impossible to get rid of." This defect may account for some of the accidents that occur on railways and shipping.

UNPUBLISHED ANATOMICAL WORKS OF GOETHE.

IN looking through the "Goethe and Schiller Archive," in Weimar, Professor Karl Bardeleben, of Jena, has discovered a series of hitherto unknown anatomical writings by the poet Goethe.[2] Dr. Bardeleben will report on his discoveries in detail in the next volume of the Goethe *Jahrbuch*; meanwhile, however, he has written a brief account of them for the *Anatomische Anzeiger*. The writings in question consist of three manuscripts of considerable length and importance, and a number of short notes. The first of the three is the first draft of the famous essay on the intermaxillary bone, of the year 1784, announcing Goethe's discovery of the said bone in man, the absence of which had hitherto been regarded as one of the main marks which distinguish man from the lower animals. Besides the text, Dr. Bardeleben found a series of illustrative drawings (originally seventeen in number) and a bundle of notes containing the not yet published details of the relevant osteological conditions in a large number of higher and lower mammalia.

One of the most interesting items of the discovery is the letter in which Goethe announced his discovery to Soemmering, who was just on the point of complying with a call to Mayence. It runs thus: "With the sincere wish that the change of your abode may redound to your happiness, I send you some attempts at osteological drawings stitched together with a view of laying before you a little discovery which I believe I have made. If, however, I should be mistaken, and tell you only something already known instead of a novelty, as I believe, forgive me, for, though my occupations do indeed permit me to cast a glance at nature and at the books which teach us to know it, it is impossible, in my position, to be accurately informed of what others have discovered before us." Not less interesting is the letter in which Loder, of Jena, the only professional anatomist who at once unreservedly recognized Goethe's discovery, congratulated him after reading the manuscript. "I return you," he writes, "the essay most kindly communicated to me with the sincerest thanks. Its perusal has given me so much pleasure, and your precision in anatomical description as well as your insight into the physiology of the part have inspired me with so much admiration, that I quite seriously regretted in my anatomical enthusiasm that you are a minister and not a professor of anatomy. But you will answer me, as the Emperor Leopold answered a musician who, after his Majesty had played him something on the piano, threw his arms round his neck in ecstasy, and regretted that he had not become a musician: 'We are not ill off as it is.'"

Besides the essay on the intermaxillary bone, Bardeleben communicates two anatomical essays, both unfinished, but showing that Goethe pursued his studies in comparative anatomy with far-sighted sagacity and with no less an ultimate aim than that of gaining a uniform basis for the conception of the various animal forms. The first of the two has reference to osteology in general. Only the first part, treating of the comparative anatomy of the skull in mammalia, is finished, and Bardeleben believes it to have been written in the summer of 1794. The second essay, treating of the forms of animals, was written at Breslau four years before, and throws much more light on Goethe's conception of the nature of comparative anatomy than the first. After careful study of these essays, Bardeleben concludes that the frequent assumption of Goethe having been a pre-Darwinian Darwinite must be subjected to strict criticism. "Whether or how far," he says, "one is justified in designating Goethe as a forerunner of Lamarck or Darwin, I do not wish to discuss here in detail. It seems to me, however, after a thorough study of Goethe's works, especially these newly discovered ones, that he did not go beyond an ideal thought or constructed type, and that the idea of man's descent from lower animals, of a real blood relationship among the latter and between them and man, was far from him."

[1] Popular Science Monthly, September.
[2] Lancet, August 8th.

Correspondence.

[From our Special Correspondent.]

INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY, MEETING AT LONDON.

PRELIMINARY ARRANGEMENTS. — OPENING. — ADDRESSES OF DELEGATES. — ADDRESSES OF PRESIDING OFFICERS IN SECTIONS. — DEATH-RATE IN ENGLAND AND INDIA. — SPREAD OF EPIDEMIC DISEASES. — TRANSMISSION OF CHOLERA. — ETIOLOGY OF MALARIA. — RABIES. — SCHOOL-CHILDREN. — TOWN FOGS, ETC. OPEN AIR SPACES. — SEWAGE DISPOSAL.

LONDON, August 21, 1891.

MR. EDITOR: — In the following notes upon the great gathering of public sanitarians from all parts of the world, I shall not attempt a full account of proceedings, but shall give an outline only of such matters as appear to be of special sanitary importance. It would require the possession of omnipresent powers to detail the valuable proceedings of the ten different Sections upon Preventive Medicine, Bacteriology, The Relation of Animal Diseases to Man, Infancy and School-Life, Chemistry in Relation to Hygiene, Architecture in Relation to Hygiene, Engineering, Naval and Military Hygiene, State Hygiene, and Demography.

The meeting of the British Medical Association at Bournemouth a few days previously, undoubtedly lent increasing interest to the Congress of Hygiene. The total number of persons who registered as delegates and members of the Congress, fell but little below 3,000. The Massachusetts Medical Society, the State, and the State Board of Health were represented by Drs. Wyman, Lyman, Drown, Prince and Abbott. Delegates were also present from New York, Maine, Michigan, Minnesota, Iowa, Kansas, and from the United States Army.

The preliminary arrangements for the Congress have been very thoroughly and successfully carried out. The place selected for the meetings is at Burlington House in Piccadilly, a location which is convenient and accessible from its proximity to many principal railway stations and hotels.

The opening meeting was held on Monday afternoon, in St. James Hall, which was crowded to its utmost, unusual interest undoubtedly being given to the meeting by the presence of His Royal Highness, the Prince of Wales, who is President of the Congress.

The meeting was opened by Sir Douglas Galton, who presented the report of the Permanent International Committee, briefly outlining the objects of the Congress.

The opening address of the Prince of Wales had the merit of brevity and good common-sense. He was followed by Dr. Brouardel, of Paris, President of the Permanent International Committee, who eulogized Jenner and Pasteur. Dr. Von Coler, Director-General of the Prussian Army, followed, his address being mainly devoted to the diminution of the death-rate in the Prussian Army, the actual decrease being represented by the difference between a death-rate of 6.9 per cent. of the strength in 1868, to 2.3 per cent. in 1888. Malarial fever, small-pox, dysentery and typhus fever have nearly disappeared from the list of diseases of actual occurrence in the army. He was followed by Dr. Roth of the German Government, and Professor Corradi of the Italian Committee, each of whom addressed the Congress very briefly.

M. Josef Körösi, of Buda-Pesth, one of the foremost of living statisticians, confined his remarks to the history of Demography, a word which has proved quite a puzzle to the London daily papers. M. Körösi's definition, however, was sufficiently clear. He stated that Demography as a branch of science, undertakes to investigate the laws which regulate the life, the increase and the decrease of nations. It comprises three parts: Statistics of natality, of mortality (including the measurement of the duration of human life), and the increase of population. The meeting closed with a vote of thanks to the Prince of Wales, offered by Sir James Paget, seconded by Dr. Buchanan of the Local Government Board, and adopted by the audience with hearty cheers.

In the evening a dinner was given to a large number of guests by Sir Andrew Clark at the Royal College of Physicians; and in this connection I ought to add that all of the entertainments, excursions, dinners and receptions which have been given to the delegates and members of the Congress have been so well and so successfully managed as to add very largely to the pleasures of the week, and gave evidence of the unbounded hospitality of the patrons, as well as of all who were concerned in the general management.

In the Section upon Preventive Medicine, on Tuesday, Sir Joseph Fayrer, presiding, opened the meeting of the Section with an excellent address, in which he outlined the general history, the scope and objects of Preventive Medicine, dwelling at some length upon the reduction of the death-rate in England and in India.

Surgeon-General Cunningham's paper on the "Mode of Preventing the Spread of Epidemic Diseases from one Country to Another," presented three methods of work: Quarantine, medical inspection, and sanitary improvement. Taking cholera as an illustrative type of epidemic disease, he condemned quarantine both on land and on sea, and approved of each of the other modes of prevention, especially that of sanitary improvement.

Inspector-General Lawson presented the subject of "The Transmission of Cholera from one Country to Another," advocating the ancient (and hazy) theory of atmospheric influence. A lively discussion ensued, in which the English authorities generally condemned quarantine as useless. Opposite views, however, were strongly maintained by many foreign delegates.

In the Section upon Bacteriology, after a brief opening address by Prof. Lister, much interest was shown in the paper by Prof. Laveran, upon the "Etiology of Malaria." In this paper the author detailed the characteristics of the hematozoon which he had already described in 1880. Prof. Hueppe, of Prague, presented the subject of the "Bacillus of Asiatic Cholera," and the discussion which followed was participated in by Drs. Klein, Gruber, and others, who took different views of the subject.

In the Section upon "The Relation of Diseases of Animals to Man," the principal topic of discussion upon the first day, was Rabies. Dr. Roux, of the Pasteur Institute, read a paper upon the results obtained at the Institute in the preventive treatment of the disease, and advocated very earnestly the methods there employed. Dr. Fleming, F.R.C.V.S., in his paper on "The Propagation and Prevention of Rabies," advocated suppressive sanitary police measures, as follows, in the order of their importance:

(1) The destruction of all dogs that are rabid, or suspected of being rabid.

(2) The seizure and, if need be, the destruction of all ownerless and wandering dogs.

(3) All other dogs to wear a properly constructed and well-fitted muzzle during the prevalence of rabies, and also for a period equal to the longest interval of latency after the malady has been suppressed.

(4) The imposition of a tax on all dogs.

In conclusion, Dr. Fleming stated his belief in the possibility of stamping out the disease by strict measures, such as he had outlined, and said that it would only exist in those countries which do not desire to get rid of it.

An interesting discussion followed, in which many facts came to light. Dr. Hime, of Bradford, said that in England muzzling, as carried out, was very much of a farce. For example, in York, the dogs on one side of a street were muzzled and on the other side (in a different district) they were not.

Dr. Drysdale said that while the medical profession in England objected to the establishment of a Pasteur Institute there, they were very willing to avail themselves of the advantages of the institute at Paris.

In Sir Henry Simpson's remarks, he strongly objected to the carrying out of any restrictive measures by muzzling,

in consequence of the interference with hunting and sporting. He warned the Section that any appeal in England for legislation upon the subject, having muzzling in view, would be in vain. (Sportsman's pleasure, *versus* the protection of human life.)

Professor Ostertag, of Berlin, cited the experience of Germany, where the laws are very plainly effectual in suppressing the disease. It is of very rare occurrence in Germany except upon the borders of other countries. In Berlin all dogs wear muzzles, and a case of hydrophobia has not been reported for ten years.

Dr. Nocard, of Paris, gave some further details of the French method of preventive treatment as applied to domestic animals, especially sheep. He expressed himself as entirely in accord with Dr. Fleming. He also said that it is undoubtedly true that muzzling diminishes rabies, but it is clear that the result is only indirectly due to the muzzle. Never has the muzzle hindered a rabid dog from biting. When one has seen a rabid dog break his teeth and even jaws on the bars of his cage, one understands that the dog would not retain one minute any muzzle that one may have been able to place upon him before the disease broke out. But the muzzle has the advantage of showing clearly to the police the dogs which have escaped from the house, or have no home, or who are not the objects of supervision. It is from this class that most rabid dogs are furnished. To seize and take them is to suppress the disease. One would get at the same result by ordering that every dog in the public street should be held in leash. This is what was done in Paris in 1888: 125 mad dogs were observed in the month of April. The prefect of police obtained an order as above. The measure was only applied six weeks, yet it sufficed to reduce from 125 to 25, the monthly number of mad dogs for the last half of the year 1888. There is no necessity for new measures to suppress rabies. It suffices to have the will, and to apply rigorously the measures prescribed in all civilized countries.

The Section upon Infancy, Childhood, and School-Life was very fully attended, and many ladies were attentive visitors in this Section. Dr. F. Warner, F.R.C.P., presented a paper on "The Scientific Observation and Study of Children in School, and the Classes into which they may be Grouped." His classification was based upon observations upon 50,027 school children, and was briefly summarized as follows:

(1) Children well made, with a nerve-system acting well, and average or bright at school-work. Of these there were among the 50,027 seen — boys, 21,315; girls, 19,536: total, 40,851. Such pupils are the average or normal, hence they do not appear further in the tables. It is seen here, as in most other cases, that the girls are better than the boys. In this work search was made for the abnormal and pathological. Scholarship would be most advantageously given to the best made children.

(2) A group similar to the last, but slow at lessons (reported dull by teachers), that is, children presenting no defects to the observer who does not use mental tests.—It is important to differentiate such pupils from those with defective brain conditions. Some children's bodies and brains are well developed and sound though presenting no present faculty for school lessons, as the teachers' evidence shows. The mental examination and history may, on the other hand, show grave defects in intellectual and moral faculty. Many of this group were "eye cases," some "cripples," several were presented by the teachers, not having been noted by us. An analysis will be given in the full report.

(3) Cases presenting defects of development of the body of various kinds. — It is not intended to represent children as exceptional from an educational point of view because some defect was present.

(4) Cases presenting abnormal nerve signs.—Their significance varies in two directions; the one group is associated with low development, the other with delicacy and nervousness.

Certain groups of children are best defined by the association of two or more physical conditions.

(5) Cases presenting defect in development and abnormal nerve signs.—Boys, 1,975; girls, 1,096; total, 3,071. Such children are usually dull at work, and are often at low nutrition.

(6) Cases presenting defect in development and abnormal nerve signs, also indications of low nutrition.—Boys, 412; girls, 381; total, 793.

(7) Eye cases. Obvious defects, such as squint or disease were recorded, but no tests were applied to detect errors of vision or refraction.

(8) Deaf or partial deaf.—Boys, 34: girls, 33; total, 67. Tests for hearing were not generally used, but when a child was found deaf it was noted.

(9) Cases crippled, deformed or maimed.—Boys, 157; girls, 84; total, 341. These children varied greatly. Many are partially incapacitated for life, others only temporarily, some are mentally dull, others bright; they also differ greatly in physical health and strength.

(10) Epileptic.—Boys, 32; girls, 23; total, 55. These cases were asked for in every school. Any case with a history of epilepsy or fits was recorded for what it was worth. It would appear that most epileptic children are frequently absent from school.

(11) Cases selected as exceptional in mental status.—This group includes cases where the results of observation coincided with the teacher's opinion as to mental defect; it includes many imbeciles, obvious brain defects and disease, while less serious cases are also given. It is difficult to define what physical conditions alone indicate the child as unfit for average training, and an arbitrary attempt to do so must fail. Speaking generally, classes 5 and 6 need special attention in school, and should be known to the managers.

(12) Children delicate, pale, or thin (low nutrition).—This condition shows a high degree of correlation, with defects in development and nerve signs, also with mental dulness. No inquiries were made in day-schools as to the feeding of the children. The 2,003 children with low nutrition, presented the following co-existing conditions: Defects in development, 1,459; abnormal nerve signs, 1,233; defects in development and abnormal nerve signs, 793; dull in school, 797.

The study of children in school.—The general outcome of this work indicates the advisability of studying the pupils in two ways: (1) by mental tests, and (2) by physical examination or inspection. For the gain of direct scientific knowledge it is desirable to note all departures from the normal types. It appears to be a great gain to note, not only points in development and physiognomy, but also the nerve signs indicated; those postures or balances and movements or actions which were noted as signs were selected after much labor in observation, analysis, and comparison, and they seem well suited for the purpose in hand. They are readily recognized, and can easily be taught by means of casts, diagrams, and demonstration.

Physical examination by inspection is useful (1) as a means of selecting cases for special mental report, (2) as supporting a report founded on mental tests only. The double mode of inquiry is specially necessary to detect certain cases; the mental test alone would leave out of view those nervous children who suffer much, but are usually bright at work and interested in it, and tend to pass the standards quickly; on the other hand, grave mental defects may occur with brains good for all other functions.

The paper received much commendation from the various members who took part in the discussion. Among other important communications to this Section on Tuesday was a paper by Dr. Jacobi of New York, on the "Employment of Children in the United States," in which he paid special attention to the progress made in the different States of the Union with reference to legislation upon this question.

In the Section upon Chemistry and Physics, Sir Henry Roscoe, presiding, addressed the Section at length upon the advances made in this branch of public hygiene, and its importance. He was followed by papers on "Town Fogs

and their Effects," by Dr. W. J. Russell; "The Air of Large Towns, and methods of its Analysis," by members of the Manchester Fields Naturalists Society, and upon "The Means at our Disposal for Preventing the Emission of Smoke from Factories and Dwelling-houses," by Mr. A. Fletcher of the Local Government Board,

In the Section upon Architecture the time was occupied by the opening address of the President, Sir A. W. Blomfield, and by a paper by the Earl of Meath, on "Open Spaces."

Granting that fresh air and open spaces are needed for the health of the people of large towns, he proposed the following methods of satisfying this need: (1) A systematic acquisition and preservation of land for public recreation, in connection with the towns and in relation to their growth; (2) Increased facilities for taking people from the towns into the country. In the towns themselves the governing bodies — the councils — should lay down and should carry out some such rule as the following: That public recreation grounds should be provided in each parish, in proportion to the number of its inhabitants.

The paper was very fully and thoroughly discussed.

In the Section upon Engineering in its Relations to Hygiene, Sir John Good, the President, gave the opening address. Among other facts which he presented, he stated that the following works have been executed for the special purpose of improving the health of London.

The main intercepting and principal branch sewers which have been constructed for the conveyance of the sewage of London to the two outfalls into the River Thames, at Barking and Crossness respectively, measure about eighty English miles.

Since the year 1856, when the now extinct "Metropolitan Board of Works" was formed, there has been expended on the main drainage works alone the sum of nearly £6,000,000, or $30,000,000.

As a by no means unimportant factor among the changes which, in modern times, have resulted in the better health of our capital city, a reference to the supply of water of improved quality, and in larger quantity must not be altogether omitted. Up to the end of 1890 the several companies (eight in number) had expended upon works for the supply of water to London, a sum very closely approximating to £15,000,000, or $75,000,000.

The average quantity of water delivered last year to the inhabitants of London, for domestic purposes alone, was 24.75 gallons per head of population per diem, and in respect to quality but little, if at all, surpassed by that supplied to any other city in Europe; this water is conveyed through pipes, the united length of which is about 1,760 miles.

The total volume of water delivered for domestic purposes only in 1890 was 64,000,000,000 gallons. For raising this large quantity the companies employed no less than 184 steam pumping engines, having an aggregate of 21,659 horse-power.

Whilst admitting that great benefits have accrued from the extensive drainage works which have been executed, and the large expenditure that has been incurred for improving the health of London, it cannot yet, by any means, be said that all has been accomplished which might be done in this direction. Nor will it be possible to say as much so long as the sewage of the metropolis is allowed to flow into any part of the Thames without previous purification by the most perfect method as yet known, that is, *by being filtered through land*. The only alternative would seem to be the conveyance of the sewage to the sea-coast beyond the mouth of the estuary of the Thames.

Professor H. Robinson read a paper on "Sewage Disposal in relation to Water-supply and River Pollution," in which he recommended the placing of rivers under continuous chemical and engineering observation (a practice which has fortunately been rendered practicable in Massachusetts by recent legislation).

Professor Pacchiotti, of Tunis, presented the subject of "Town Drainage in Italy," in which he submitted the following essential principles for adoption: (1) Every town must select that form of sewage disposal which is best adapted to its own circumstances; (2) The *tout a l'égout* system most clearly approaches perfection, and should be adopted by all towns which have a good water-supply and approved gradient; (3) Towns possessing suitable soil in or near a town, should establish sewage farms; (4) Unless absolutely unavoidable, sewage must never be allowed to flow into water-courses.

Other papers were read by Baldwin Latham, C. E., on "Sanitation in India"; "French and English Systems of Sewage," by Jas. Lemon, C. E.; and "The Sanitation of Mining Settlements."

In the General Division of Demography, having one Section only, Sir Francis Galton gave the opening address, in which he dwelt largely upon the relative fertility of different races and their tendency to supplant one another under different circumstances. He said, in conclusion, that the improvement of the natural gifts of future generations of the human race is largely, though indirectly, under our control. We may not be able to originate, but we can guide. The processes of evolution are in constant and spontaneous activity, some pushing towards the bad, some towards the good. Our part is to watch for opportunities to intervene by checking the former and giving free play to the latter. We should distinguish clearly between our power in this fundamental respect and that which we also possess of ameliorating education and hygiene. It is earnestly to be hoped that demographers will increasingly direct their inquiries into historical facts, with the view of estimating the possible effects of reasonable political action in the future, in gradually raising the present miserably low standard of the human race to one in which the Utopias in the dreamland of philanthropists may become practical possibilities.

After reading his inaugural address, Mr. Galton called upon Dr. Ogle, M.D., F.R.C.P., to read his paper on "The Relation of Occupation to Disease and Mortality."

Dr. Ogle contributed valuable statistics from English sources in which the following causes were given for differences in mortality in different occupations:

(1) Working in a cramped attitude, and especially in one that interferes with the action of the thoracic organs; (2) Overwork, and especially sudden muscular efforts and strains; (3) Dealing with noxious substances, such as lead, phosphorus, mercury, infected hides, etc.; (4) Working in ill-ventilated and overheated rooms; (5) Alcoholic excess; (6) Liability to accident; (7) Exposure to inhalation of dust of various kinds.

These causes were severally considered, and statistical tables given illustrating their action.

The mortality of dealers in liquor was specially considered, and was shown to be in the ratio of 1,521 to 1,000, as compared with men in other occupations.

(To be continued.)

BOGUS MEDICAL COLLEGE IN WASHINGTON.

Tacoma, Wash., August 27, 1891.

Mr. Editor: — Attention has been recently drawn, through the columns of your valuable journal, to the alleged medical college (Washington Biochemic) recently established at North Yakima, Wash. The enclosed article clipped from the Tacoma *News*, and written by me, as ex-president of the Pierce County Medical Society, will throw some light upon the inception and fate of this ephemeral fungoid growth. "Professor" Carey was fined fifty dollars and costs, for illegal practice of medicine, by Judge Curry, of Spokane.

The proportions of the concern can be better understood if you tell your readers that a fire which destroyed five hundred dollars' worth of stuff (at retail prices, profits six hundred per cent.) nearly bankrupted the "institution," and that "Professor" Gans is a truck farmer on a three-acre lot.

Yours truly,

J. A. Beebe, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, AUGUST 29, 1891.

Cities.	Estimated population for 1891.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	826	376	24.00	11.76	16.92	1.80	3.00
Chicago	1,099,850	439	243	30.58	7.48	18.26	6.38	2.86
Philadelphia	1,046,964	377	188	18.72	9.10	14.30	1.04	1.82
Brooklyn	806,343	—	—	—	—	—	—	—
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	205	87	32.34	11.27	25.48	3.43	1.47
Baltimore	434,439	167	83	29.40	7.20	24.00	1.80	1.80
Cincinnati	296,908	85	19	15.21	21.06	11.70	—	—
Cleveland	242,000	—	—	—	—	—	—	—
New Orleans	242,039	103	25	20.37	13.58	9.70	.97	—
Pittsburg	240,000	132	69	36.48	11.96	16.96	7.60	5.32
Milwaukee	240,000	97	58	30.90	6.18	19.57	1.03	6.18
Washington	230,392	104	46	26.88	6.72	16.32	1.92	4.80
Nashville	76,168	30	7	16.66	20.00	10.00	3.33	—
Charleston	65,163	28	10	13.28	10.71	13.28	—	—
Portland	36,425	15	7	33.33	6.66	26.66	—	—
Worcester	84,655	44	25	45.40	6.81	27.24	—	11.35
Lowell	77,696	43	29	41.94	9.32	34.95	—	2.33
Fall River	74,398	—	—	—	—	—	—	—
Cambridge	70,028	16	6	32.25	12.50	25.00	—	—
Lynn	53,727	12	11	58.31	33.33	50.00	—	8.33
Lawrence	44,654	22	12	40.95	9.10	40.95	—	—
Springfield	44,119	24	7	20.80	12.48	16.64	—	—
New Bedford	40,733	15	9	39.96	—	39.96	—	—
Salem	39,801	20	14	60.00	—	50.00	—	5.00
Chelsea	27,909	14	5	28.56	—	21.42	—	—
Haverhill	27,412	14	5	7.14	14.28	7.14	—	—
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	6	2	50.00	—	33.33	—	—
Gloucester	24,651	19	8	47.34	10.52	42.06	—	5.26
Newton	24,379	7	2	42.84	14.28	42.84	—	—
Malden	23,031	13	4	15.38	7.69	15.38	—	—
Fitchburg	22,037	11	6	45.45	—	45.45	—	—
Waltham	18,707	10	3	30.00	—	30.00	—	—
Pittsfield	17,231	8	7	75.00	12.50	75.00	—	—
Quincy	16,723	2	1	50.00	50.00	50.00	—	—
Newburyport	11,079	9	2	22.22	33.33	22.22	—	—
Medford	13,947	3	1	—	—	—	—	—
Clinton	10,424	—	—	—	—	—	—	—
Peabody	10,193	3	—	33.33	33.33	—	33.33	—

Deaths reported 2,821: under five years of age 1,374; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 791, consumption 303, lung diseases 151, diarrhœal diseases 571, typhoid fever 75, diphtheria and croup 58, whooping-cough 24, scarlet fever 21, malarial fever 19, cerebro-spinal meningitis 11, measles 8, erysipelas 4.

From whooping-cough Pittsburgh 7, Chicago 5, Philadelphia, Boston, Milwaukee, Washington and Lowell 2 each, New York and New Orleans 1 each. From scarlet fever New York 9, Chicago 5, Philadelphia and Cincinnati 2 each, Boston, Milwaukee and Washington 1 each. From malarial fever New Orleans 9, New York 4, Baltimore 3, Philadelphia 2, Nashville 1. From cerebro-spinal meningitis New York, Chicago and Worcester 2 each, Boston, Washington, Cambridge, Chelsea and Taunton 1 each. From measles New York 3, Chicago and Pittsburgh 2 each, Portland 1. From erysipelas Cincinnati, Pittsburgh, Milwaukee and Worcester 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending August 22d, the death-rate was 18.0. Deaths reported 3,252: acute diseases of the respiratory organs (London) 157, diarrhœa 349, whooping-cough 76, measles 42, diphtheria 34, fever 32, scarlet fever 31.

The death-rates ranged from 8.8 in Halifax to 26.6 in Sunderland, Birmingham 15.5, Bradford 17.3, Hull 18.9, Leeds 17.2, Leicester 21.6, Liverpool 22.4, London 17.8, Manchester 18.5, Nottingham 15.9, Sheffield 20.0, Wolverhampton 14.5.

In Edinburgh 18.9, Glasgow 18.5, Dublin 20.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 29, 1891, TO SEPTEMBER 4, 1891.

Leave of absence for fifteen days is granted Surgeon J. V. D. MIDDLETON, U. S. Army.

Leave of absence for twenty-five days is granted Major JAMES P. KIMBALL, surgeon, U. S. Army.

Leave of absence for one month, to commence on or about September 3, 1891, is hereby granted Captain ADRIAN S. POLHEMUS, assistant surgeon.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 5, 1891.

HOWARD WELLS, surgeon, ordered to temporary duty in the Bureau of Medicine and Surgery.

S. H. DICKSON, surgeon, detached from the practice ship "Constellation" and wait orders.

L. W. CURTIS, passed assistant surgeon, from the "Constellation" and to the Naval Academy.

W. H. RUSH, passed assistant surgeon, ordered to the U. S. S. "Yantic."

H. G. BEYER, passed assistant surgeon, detached from the "Yantic" and granted two months leave.

ROBERT BOYD, assistant surgeon, from the U. S. S. "Dale" and to the Marine Rendezvous, Boston.

VIRCHOW TESTIMONIAL FUND.

The following, final, statement is made of the contributions received by the American Committee, all of which have been forwarded to the Treasurer of the German Committee —

Amount previously acknowledged	$1,124.00
Through William Osler, Baltimore	211.00
" William Pepper, Philadelphia	107.00
" Gustav Baumgarten, St. Louis	80.00
" John S. Billings, Washington	45.00
Additional through J. T. Whittaker, Cincinnati	30.00
" from New York, through W. H. Draper	10.00
From Henry M. Lyman, Chicago	25.00
" John A. Gordon, Quincy	5.00
" George Ross, Montreal	5.00
" James E. Graham, Toronto	10.00
Interest	8.69
Total,	$1,660.69

Reginald H. Fitz, M.D., for the Committee.

APPOINTMENT.

JOHN F. CROSTON, M.D., of Haverhill, Mass., has been nominated by Governor Russell, as medical examiner in his district to succeed Dr. William Cogswell, of Bradford, deceased.

ERRATA.

In the article on "Sarcoma of the Nose," by Dr. J. Payson Clark, in the last number of the JOURNAL, there were two errors. On page 239, first column, fourth paragraph, fourteenth line, "the *snare* being turned slowly" should read "the *screw* being turned slowly." On page 241, second column, third paragraph, twelfth line, *microscopy* should read *rhinoscopy*.

DEATHS.

GEORGE E. LIVERMORE, M.D. (Dart. 1884), M.M.S.S., of Lowell, died September 4th.

W. W. A. SPOTSWOOD, M.D., U. S. N., died in Mobile, Ala., September 7th, aged eighty-five. He was appointed assistant surgeon in the Navy in 1828, and surgeon in 1838, and retired in 1861.

HORACE HATCH, M.D., died in New Haven, Conn., August 28th. He had practised medicine in Washington for twenty years, retiring in 1884.

J. R. SPEER, M.D., died in Pittsburgh, September 6th, aged ninety-five.

DANIEL PARDEE, M.D., of Fulton, N. Y., died August 25th, aged sixty-two.

JOHN F. KEEFE, M.D., of New York, died August 26th, aged forty-six.

BOOKS AND PAMPHLETS RECEIVED.

A Manual of Practical Hygiene. By the late Edward A. Parkes, M.D., F.R.S., Professor of Military Hygiene in the Army Medical School. Eighth edition. Edited by J. Lane Notter, M.A., M.D., etc. Philadelphia: P. Blakiston, Son & Co. 1891.

Diseases of the Nasal Organs and Naso-Pharynx. By Whitfield Ward, A.M., M.D, etc. New York and London: G. P. Putnam's Sons. 1891.

The Electrical Treatment of Fibroid Tumors, with an Analysis of Forty-six Cases. By G. Betton Massey, M.D. Reprint. 1891.

Address.

THE HEALTH AND LONGEVITY OF MEDICAL MEN.[1]

BY FRANCIS MINOT, M.D.

MR. PRESIDENT AND GENTLEMEN: In thanking you for the honor you have conferred upon me by inviting me to address you on the occasion of your annual meeting, I need hardly allude to the advantages, both to the profession and to the community, of an association like this, including so many of the most eminent medical men of the State. In no way is the science and practice of medicine better promoted than by the frequent intercourse of physicians, who are thus enabled to contribute to the common stock of professional knowledge the results of their personal observation on the nature and the course of the various diseases to which we are liable, as well as their experience in the modes of treating them. Such meetings are also valuable as a means of maintaining the dignity of the profession, of making it worthy of the respect of the public, by showing that the great object of medical science is the prevention and cure of disease and the relief of human suffering. I need not dwell upon the pleasure of personal intercourse and social enjoyment which an occasion like this affords.

In offering for your consideration some remarks upon the subject of the health and longevity of medical men, I shall endeavor to point out the advantages we possess over other professional men, as well as the dangers to which we are especially exposed, and the best means of their prevention.

It would be reasonable to believe that the health of professional men, that is of ministers, lawyers and doctors, ought to be as good as, if not better, than that of the rest of the community. They have good food, good clothing and good shelter. They are generally fully occupied, but only exceptionally overworked. They are usually free from the trials and anxieties of political life. Money-making is not often a passion with them. Comparatively speaking, they are but little subjected to temptations of excess and immorality, which are the sources of a considerable part of the diseases of mankind.

Both observation and investigation confirm this impression; and in respect to longevity, we find that lawyers, ministers and doctors rank among the highest in the different classes of society. Some interesting figures relating to this subject are contained in the Massachusetts Registration Report for 1885, prepared by Dr. Frank Wells (the latest which I have at hand), and, at the risk of wearying you with such dry details, I will venture to quote them. The average age at the time of death of nearly 230,000 persons whose occupations were specified (including only those individuals who were over twenty years old at the time of death), during a period of forty-two years and eight months, in the State of Massachusetts, was 51.82 years. Now we find that, of these 230,000 persons, the clergymen, professors, lawyers and physicians have a decided advantage over all the others. Dr. Wells's tables include a total of 4,495 such persons, and their average age at the time of death was over fifty-nine and one-half years, distributed as follows: judges and justices averaged 66.17 years; clergymen, 60.31 years; professors (classified as distinct from teachers), 58.44 years; physicians, 56.51 years; lawyers, 56.41 years. Thus we see that, in respect to longevity, professional men, in a community in which the physical comforts of life are probably as evenly distributed as in any other part of the world, have but little to complain of.

Comparing the duration of life in the three professions of divinity, law and medicine (in Massachusetts), we find, according to Dr. Wells's report, that clergymen (averaging 60.31 years) have the advantage of about four years over the others. (I leave out the question of the average for judges and justices, which being based upon an aggregate of only forty-six persons is hardly trustworthy.) Professors (classified as distinct from teachers), with an average of 58.44 years, come very near ministers; while physicians and lawyers, who are almost exactly alike in their expectancy of life (56.51 years and 56.41 years respectively), are lowest in the scale.

These ratios differ somewhat from those which obtain in England. The clerical profession stands there, as with us, highest in longevity, but the medical men are much the lowest. Dr. William Ogle, in a valuable paper read before the Royal Medical and Chirurgical Society, a few years ago, states that in the years 1880, 1881 and 1882, the ratio of the *mortality* of the medical profession was 25.53 per thousand living persons; of the legal profession, 20.23 per thousand; of the clerical profession, only 15.93 per thousand living. Such a difference between the mortality of medical men in England and in this country is very remarkable, and cannot easily be accounted for. Possibly it may not be correct, the error being due to the smaller aggregate of individuals reported with us, compared with the very large numbers upon which the English statistics are based. At any rate, the duration of life of medical men in Germany corresponds very nearly with that in the State of Massachusetts. According to Dr. Birnbaum,[2] the average age at the time of death of 2,000 physicians was 57.8 years.

The question is often asked, How do physicians escape contagious diseases, to which they are so much exposed? According to Dr. Ogle they do not escape them (in England), since in most contagious maladies, such as scarlet fever, diphtheria and typhus (ship) fever, their mortality is in excess of that of other men; though in small-pox much less, owing to their careful protection by vaccination. In all lung diseases, especially consumption, their mortality in England is also much less than that of other men, probably owing to their open-air mode of life. The excess of their general mortality is, according to Dr. Ogle, probably to be accounted for in great part by their laborious lives, by loss of sleep, by great responsibility and anxiety, by irregularity of meals; and, I may add, by want of sufficient intervals of relaxation and of long vacations. These unfavorable conditions of the professional life do not, however, apply especially to English physicians; they are the same with practitioners in all parts of the world, and the deaths from contagious and infectious diseases, such as diphtheria, ship fever, typhoid fever, etc., are very considerable among physicians in this country, especially among the younger members of the profession, who spend much time in the insanitary dwellings of the poor.

[1] Address delivered at the Annual Meeting of the Rhode Island Medical Society, June 11, 1891.

[2] Die Lebensdauer der Aerzte, Deutsche Med. Zeitung, No. 26, 1890.

On the whole, I am inclined to share the belief of Dr. Charles K. Mills, as stated in an interesting (Toner) lecture delivered at the Smithsonian Institute, that physicians, in this country at least, are less liable to disease than members of other professions, in spite of broken rest, irregular meals, bodily fatigue and much responsibility, owing to their active life, much of which is spent out of doors, and to their knowledge of health and disease, which they are able to apply to their own behoof.

The majority of our profession depend for their subsistence upon work, and most of us derive from our labor a great amount of happiness. The problem, therefore, is how to accomplish the greatest amount with the least injury to health. This is best attained by intervals of relaxation. Moreover, the *quality* of the work accomplished often depends upon the amount of rest allowed, and upon a habit of occasionally withdrawing the mind as completely as possible from business cares during the intervals of rest. It is wise to have some supplementary occupation, wholly different from professional labor, to which we can turn, from time to time, for refreshment. The cultivation of flowers, the study of some branch of natural history or other science, the pursuit of some subject in history, literature or art, etc., furnish an agreeable change from our regular employment, to which we can afterwards return with increased power of application. Many great workers avail themselves of this alternation of employment, often seeking the very opposite to their professional duties for refreshment. I knew an eminent justice of the Supreme Court of Massachusetts, who, during the summer circuit, after a hard day's work in court, would retire to his bedchamber with a candle, and spend the evening in reading a sensational novel; and we all know how Macaulay delighted in reading works of fiction during his moments of leisure. Sir John Lubbock, well known for his researches in anthropological, botanical and entomological subjects, is, by profession, a banker in London, busily occupied in financial affairs, and also a member of Parliament.

Besides occasional short alternations of work and relaxation, few things are of more benefit to the health of professional men than a complete vacation from business once a year. This should, if possible, embrace some weeks spent away from home, for the sake of a complete change of surroundings. The late Benjamin R. Curtis, one of Massachusetts's greatest lawyers, used to say that he could easily accomplish his year's work in nine months, but not in twelve.

Insufficient exercise, especially walking, may be mentioned as one of the causes of ill-health among physicians. Many of us spend almost the whole day, and sometimes many hours of the night in driving, which affords but a poor substitute for leg-exercise. I hope the use of the bicycle will soon supercede, to some extent, driving; and that gymnastic exercise, which is also a valuable means of promoting the health, will become popular with doctors.

Another serious interference with health in our profession is insufficiency of sleep. Every physician should if possible, secure at least seven hours of rest at night; and when this is interrupted, he should make up for it, at least in part, in the daytime. Happy the doctor who acquires the habit of sleeping at odd moments, when his nights are disturbed by his duties towards his patients.

In conclusion, permit me to illustrate the suggestions which I have ventured to offer by citing three examples of laborious lives. In the first one, owing to neglect of precautions for the preservation of health, the result was disastrous, both to health and life. In the two others, in consequence of judicious alternations of labor and recreation, an immense amount of work was accomplished without injurious consequences.

The first case I shall quote illustrates so clearly the folly of incessant work without any relaxation that it needs no comment. It is that of an eminent London physician, the late Dr. Golding Bird, by whose death the profession lost one of its most brilliant members. It is related by his friend, Dr. Routh, in the following words: "I well remember a conversation I had with the late Dr. Golding Bird, a few months before his death. He was then in the zenith of his popularity, and recognized by all as one of the ablest of our London physicians. I called upon him one morning with a relative to consult him. Several other medical men had preceded me; his rooms were full; and I had to wait three hours ere I could gain admission to his study, and consult him about the case. I congratulated him on his success in practice. 'Yes,' he said to me, 'you are right; but I wish, nevertheless, to make your remark a text for a little parting advice. You see me, at a little over forty, in full practice; my rooms are full, and I am making my several thousands [pounds] per annum (I think he said seven), and if I die to-morrow, I do not leave as many hundreds to my family. All this I have done by sheer preseverance, unceasing hard work, and no holiday. But I am to-day a wreck. I have fatal disease of the heart, the result of anxiety and hard work. I know I cannot live many months; and my parting advice to you is this, Never mind at what loss, take your six-weeks' holidays. It may *delay* your success, but it will *insure* its development. Otherwise, you will find yourself at my age a prosperous practitioner, but a dying old man.' Six months after this conversation he had put off this earthly tabernacle."

Few men ever accomplished more by dint of hard work than Charles Darwin, yet Darwin was a sufferer from ill health during the greater part of his life, so that he could only employ a few hours a day in writing, and those had to be systematically divided, with intervals of rest and exercise between. But he never wasted time during his hours of work. "He would often say that saving the minutes was the way to get the work done." He breakfasted at a quarter before eight, and went to work at once from eight to half-past nine, when he read his letters, or had them read to him, together with a part of a novel, till half-past ten. Then he worked till noon, or a little later. Riding or walking followed, then came lunch, after which he read the newspaper and wrote letters till three. Then resting on a sofa he listened to a novel, or some book not scientific. In the afternoon he worked from half-past four to half-past five. His actual literary work, therefore—(writing and reading), occupied only five hours, or sometimes five hours and a quarter, daily, besides his correspondence, which he usually dictated. But this did not include the whole of his scientific work, a considerable part of which consisted in experimental investigation of the habits of plants and animals, and which was much less fatiguing to him. "He was fond of listening to music, and

liked novels. Walter Scott, Miss Austen and Mrs. Gaskell were his favorite authors, who were read and re-read, till they could be read no more. It was a sure sign that he was not well when he was idle at any other times than his resting hours, for as long as he remained moderately well there was no break in the regularity of his life." Darwin died at the age of seventy-three years. His complaint seems to have been a functional derangement of the stomach, or possibly, gastric ulcer. He had frequent nausea and vomiting, and, at times, severe pain, by which he was greatly prostrated, and not rarely laid up for weeks, unable to do any work. Yet, by great regularity of life, and frequent intervals of complete rest, he accomplished an enormous amount of work.

Another prodigious worker was Dr. Littré, a French physician, best known as the author of the great French dictionary in four quarto volumes, and who was also eminent in several other departments of literature. The following description of his labors during the printing, only, of the dictionary (which required thirteen years) is given in his own words: "My rule of life included the twenty-four hours of the day and night, so as to bestow the least possible amount of time to the current calls of existence. . . . I rose at eight; very late, you will say for so busy a man! Wait an instant. Whilst they put my bedroom in order, which was also my study, I went down stairs with some work in hand. It was thus, for example, that I composed the preface of the dictionary. I had learned from Chancellor d'Agueseau the value of unoccupied minutes. At nine, I set to work to correct proofs until the hour of our midday meal. At one, I resumed work, and wrote my papers for the *Journal des Savants*, to which I was, from 1855, a regular contributor. From three to six I worked on the dictionary. At six, punctually, we dined, which took about an hour. They say it is unwholesome to work directly after dinner, but I have never found it so; it is so much time won from the exigences of the body. Starting again at seven in the evening, I stuck to the dictionary. My first stage took me to midnight, when my wife and daughter (who were my assistants), retired. I then worked on till three in the morning, by which time my daily task was usually completed. If it was not, I worked on later, and more than once, in the long days of summer, I have put out my lamp, and continued to work by the light of the coming dawn. However, at three in the morning I generally laid down my pen, and put my papers in order for the following day, that day which had already begun. Habit and regularity had extinguished all excitement in my work. I fell asleep as easily as a man of leisure does, and woke at eight, as a man of leisure does." He was past forty when he began this work; he was fifty-nine when he began to print the dictionary; he was seventy-two when he completed it, and he lived to be near eighty. He abstained from every kind of luxury and indulgence, *except one month in the year*, spent on the coast of Brittany. It was doubtless this vacation which chiefly helped to preserve his health during this gigantic work; but I think the diversion afforded by writing articles for the journals was also of some assistance.

Few of us will be called upon to undertake such labors as were achieved by each of these three men; yet, as a rule there is no profession which exacts so much work as ours. If I shall have called attention to the importance of preserving our own health, while engaged in the task of restoring that of our patients, I shall not have spoken in vain.

Original Articles.

TYPHOID FEVER.[1]

BY WILLARD H. PIERCE, M.D., OF BERNARDSTON.

Typhoid or Enteric Fever, from the variety and severity of its symptoms and from the fatality which attends many of its epidemics, is one of the most interesting and important diseases with which we have to deal. The disease is of interest from two standpoints: first, as regards the theoretical problems of its bacterial origin, etc.; second, and that with which I shall most particularly deal in this paper, from its clinical aspect.

Typhoid fever was not treated of as a separate disease until the present century, and its personality was not generally accepted until about the middle of the century. Since that time much has been written on this subject by able and scientific observers, and, considering my limited means for accurate, scientific work, it may seem presuming in me to attempt to deal with the subject. Nevertheless, as my clinical acquaintanceship with the disease has been considerable, and in carefully observing its course and termination certain beliefs have forced themselves upon me which are not in exact accord with the writings of many standard authors, I may be pardoned for presenting them for consideration.

The correct answer to the question "What is the exact etiological factor which produces the disease known as typhoid fever?" would be of more value than volumes written upon pathology and treatment. But, as a matter of fact, we do not know the exact nature of the poison which produces this disease. One thing seems to be established, namely, that the germ finds its best abiding place in decomposing animal matter. But I believe that it does not originate from the contents of cesspools and sewers, but in them finds the proper soil to develop its specific properties of producing typhoid fever.

The disease under discussion is eminently a disease of civilization. When a country or section of a country is first settled, malaria is the disease which predominates. But, as time goes on, and the accumulation of decomposing organic matter increases, the proper soil is made for the development of the typhoid germ, and malaria is displaced and enteric fever gradually becomes more prevalent.

In the recent epidemic which occurred in my vicinity the cause could be, in most instances, traced to the contamination of the drinking-water by water-closet sewerage. But there were hardly two cases which could be said to have received their poison from the same source. It seemed in some way the germs were disseminated through the air, but produced no disease except where they were first combined with decomposing animal matter, and then found their way into the drinking water of the unsuspecting victim. The increased prevalence of the disease in the autumn is undoubtedly due to the fact that the germ, wherever it may exist, becomes dried by the heat of summer, and,

[1] Read before the Massachusetts Medical Society, June 9, 1891, and recommended for publication by the Society.

in this condition, is easily carried through the air, and, having been combined with the proper reagent, so to speak, is rendered active and capable of producing a specific form of fever.

My first practical knowledge of the manner in which typhoid fever is propagated was gained while a student in Burlington, Vermont. This beautiful city with its perfect system of drainage (it being located on a hill-side), would seem to be a spot where one would be safe from the ravages of the typhoid germ. But, looking more closely, it would be seen that all the sewerage of the city was emptied in Lake Champlain and the water-supply for the inhabitants was pumped out less than one-half a mile from the opening of the main sewer.

Now, the fact that the people had for years been drinking diluted sewerage, and had not had typhoid fever, goes far to prove that the germ does not originate, *de novo*, from organic impurities. But, in the summer of 1884, a case of this disease was imported, and in the space of a few weeks a terrible epidemic swept through the city, causing the loss of many valuable lives. Of course, many examples like the above are familiar to you all. One of the most recent is the epidemic in Philadelphia, where, since January 1st, there have been about 1,500 cases, with 311 deaths; — the cause being, undoubtedly, the drinking of the sewer-polluted water in combination with the typhoid germ. In giving the result of my clinical observations, as to the immediate cause of typhoid fever, I would say, that I believe the disease is caused by a specific germ, but that this germ is not capable of producing the fever when first derived from the typhoid patient, but must undergo a change resulting from its combination with some substance found in decomposing organic matter.

Now, if this hypothesis be true, a great majority of cases of typhoid fever might be prevented by laws, giving the Board of Health in every community the power to compel every householder, whether in city or country, to see to it that the sanitary conditions are such as to render it impossible for drinking-water, or food or air to be contaminated with the emanations from the water-closets or sewers. It certainly is the duty of every one of us to instruct those under our care in the matter of sanitary arrangements, so that there may no longer exist, as there now does in a surprising number of cases, an almost direct communication between the well and the cesspool. This part of the subject is to be ably discussed in another department, so I will leave it with this brief allusion to the really most important part of the study of typhoid fever.

In discussing the diagnosis of enteric fever it can be said that, in many cases, a positive diagnosis cannot be made during the first, and, oftentimes, until the second or third week of the disease. The fever often departs from its typical course, and we must ever be on the alert and cautious as regards our diagnosis during the early days of a continued fever.

We often hear it said by the laity and sometimes, I am sorry to say, by members of the profession, that a simple "slow" fever has "run into" a typhoid. Of course a typhoid fever is typhoid from beginning to end.

Cases pass through their whole course without eruption, delirium, tympanites or iliac tenderness, and yet suddenly die from hæmorrhage, and the autopsy shows the typical lesion of enteric fever.

In illustration of this part of the subject, I will report the following cases which occurred in my vicinity last fall:

The first patient whose case I will present was a laboring man about fifty years of age. My first visit was during the month of July, and the only symptoms were that he felt "weak and run down," as he expressed it. His temperature was normal, pulse 80, tongue lightly coated, bowels badly constipated, no appetite, urine high colored but normal in quantity. Surface of the body free from eruption. No case of continued fever had been under my observation for months. The man continued in practically this same condition for two weeks. He was able to be about the house and did some light work.

At the beginning of the third week a slight temperature showed itself, and, after two or three days, ranged 104° in evening and 102° in the morning. There was no diarrhœa, laxatives being necessary throughout the whole course of the disease. No tympanites, no delirium and no iliac tenderness.

I should have been obliged to show my ignorance of the nature of the malady, by calling the case one of "slow" or "bilious" fever (which, by the way, means nothing), had not the typical typhoid eruption shown itself at about the fourth week of the illness. Several successive crops appeared, demonstrating the nature of the fever.

The fever disappeared at the end of 42 days, counting the two weeks during which there was no rise in temperature. The man made a slow recovery. In this case there were absolutely no symptoms showing the disease to be typhoid fever until the eruption appeared, yet, given the proper soil in which to develop, the germs given off in the dejections from this patient might have produced an extensive and fatal epidemic of enteric fever. Our unfailing rule in cases of fevers, therefore, should be to thoroughly disinfect all discharges, whether or not the exact nature of disease be evident at first.

A second case I will briefly report here to show the unsatisfactory condition of our knowledge of continued fevers.

A man aged 40, newspaper editor. Had suffered more or less from attacks of malaria for two years previous to this illness. I was first called to him in August last, and, at my first visit, found an afternoon temperature of 104°; rapid pulse, loss of appetite and feeling of general *malaise*.

The patient was put in bed, on a milk diet, and full doses of quinine administered, with the idea that I had a case of intermittent to treat. The temperature, of course, was for a few hours lowered, but soon mounted up to a higher point than ever. The quinine had no effect on the course of the disease, although it was given a thorough trial.

This patient continued for six weeks with a fever ranging about 104° in the evening and 102° in the morning. There were no symptoms to indicate the exact nature of the fever. All the typical typhoid symptoms were absent except the curve of the temperature, which followed about the prescribed course. Yet, what was the disease from which this man suffered and barely made a recovery after one true relapse (caused by an error in diet) and a protracted convalescence? It certainly was not a true intermittent or remittent fever. Three physicians were called in consultation, and one said the case was remittent; one

that it was typho-malarial, and one that it was a bilious fever, whatever that may be.

This case serves to show in what a dilemma I, at least, find myself in the diagnosis of a continued fever possessing no distinctive symptoms. And these kinds of fevers are much more common than I believed while listening to didactic lectures or reading the accurate descriptions of the text books. I will cite one more case in this line.

This case was reported to the Franklin District Medical Society by Dr. N. P. Wood of Northfield, and the notes of the same have been kindly loaned to me. I will report in the doctor's own words:

"August 29, 1888, I was called to see Mrs. R. S., aged 42, married. She gave a history as follows: Had complained of general *malaise* for nearly a week; headache, loss of appetite, loose bowels and somnolence. I found her with a slightly coated tongue, anorexia, headache, but temperature and pulse normal. Her bowels moved from one to three times daily, while her usual condition was constipated. Color and odor of stools were normal. She said she had had similar attacks and usually recovered in a few days. Prescribed sponge bath and bitter tonic.

"In two or three days the headache, somnolence and loose bowels disappeared, but the anorexia, coated tongue and *malaise* continued.

"There was absolutely no tympanites, no tenderness over the abdomen and no rise of temperature. This condition continued about ten days, when I discovered the typical eruption of typhoid fever on the abdomen. This eruption continued in successive daily crops for about ten days more. This general condition lasted until September 22 (she was first seen on August 29), when she began to improve and went on to recovery in about the usual way after typhoid fever.

"Not once during the course of this sickness did I discover any departure from a normal temperature."

Dr. Wood reported another case which followed about the same course as the above, absence of a rise of temperature, etc. This patient died from the severity of the attack, and the autopsy showed the unmistakable typhoid lesion.

Now in my experience, the cases which are called atypical are more numerous than those which correspond to the description given in our standard text-books, and by medical instructors, as the usual course of the disease.

We who begin the practice of medicine to-day, have no method of learning the natural history of a disease but by the writings of those who have observed the clinical symptoms before us. One of two things, therefore, must be true: either typhoid fever has of late grown more mild and its symptoms more often depart from the supposed typical course, or else, we are dealing with a different disease. It seems that *writers* of to-day dare not depart from the older descriptions of the clinical history of typhoid, but I have *personally questioned* many physicians of extended experience and none of them are familiar with the symptoms (except in rare cases) as we are taught to look for them. During the past season I was brought in contact with many more than the usual number of cases which occur each year, but in only one instance did I observe what might be called a typical case. The symptoms most frequently absent are delirium, tympanites, iliac gurgling and tenderness, and, in many cases, the fever is not of a high range.

My conclusions in regard to this matter are these:

First: the disease now known as Typhoid Fever differs much from that described by the older writers, and the symptoms which were formerly thought to be invariable, are much less frequently present.

Second: the diagnosis of this disease is many times attended with extreme difficulty, and is generally impossible in the early stages.

Third: cases which seem extremely mild may suddenly develop dangerous symptoms, and the patient may die as a result of errors in diet or other indiscretions.

Fourth, and lastly: that much study is needed so we may properly classify fevers and avoid confusion.

I believe that from the study of bacteriology we shall eventually receive the required light on the subject.

Coming now to the treatment of this protracted and dangerous disease, it would seem that some radical measures must be instituted to destroy its activity.

But, although in no other disease with which we have to deal is the constant and careful attention of the physician more necessary, yet, I am moved to say, in no other malady is injudicious and indiscriminate use of drugs more productive of harm than in typhoid fever.

The patient must be under our watchful supervision, but, instead of standing ready to pour the heaviest guns of our medical battery upon the advancing disease, we should carefully watch the teachings of that almost unerring guide, *Nature*, and assist her with the most gentle means at our command. First, and most important of all, is the dietetic part of the treatment. Many cases need nothing more than rest in bed and a proper regulation of the diet. I would say here that in all cases the patient should not be allowed to be out of bed.

What is the proper diet for a typhoid patient? This is a most important question, and one much discussed. There has of late arisen a belief among a part of the profession (and, among these, many of our eminent men), that a more "liberal diet" should be allowed; that many patients die from lack of the proper amount of nourishing food. The patient is, therefore, given beef and mutton broths, and, indeed, solid animal food; also many other kinds of solid food.

In my opinion there are radical objections to this method of feeding a fever patient.

First: it is a physiological and clinical fact that when the temperature is above normal, the digestion of animal food goes on slowly, and, where the temperature is high, is not performed at all.

Second: there is formed a large, partly digested mass of fæcal matter acting as an irritating, foreign body, augmenting the fever and other symptoms of the disease, and requiring for its expulsion an extra effort on the part of the already over-taxed powers of nature.

We are dealing with a disease whose primary lesion is in the intestinal canal, and the ideal food is one which will be most completely digested by the stomach and form the least waste matter. Now, we have just this ideal food supplied us in good, fresh cow's milk. And I believe clinical experience bears me out in saying that the best results are obtained by its judicious use.

I say judicious, for the well being of the patient depends, not upon the amount of milk *exhibited*, but upon the amount which is *digested* and *assimilated*.

And here, I believe, is the explanation of the ill results obtained by some physicians. A rule has been given that every patient must receive from three to six pints of milk in the twenty-four hours. So this exact amount is poured into the stomach without regard of its capacity for digesting it. Now, I have seen six ounces to be of infinitely more benefit to a patient than six pints would have been.

Our only *rule* should be to administer no more milk than can be readily digested and assimilated. The ill effect of animal food given to a seemingly mild case of typhoid fever, is shown by the following cases:

First, a young girl, aged 12 years; had reached the fourth week of the disease, the temperature never having risen above 104°, and much of the time only 102° in the evening. No bowel symptoms. The parents thought it was time to give something more substantial than milk, so called in consultation a physician who was of the same opinion.

Scraped, raw beef, placed between two thin layers of bread, was given to the patient. Intense pain followed the ingestion of the food, and, for a time, it seemed that death would ensue as a result.

In about six hours, however, the offending mass was ejected from the bowels in exactly the same condition as when taken into the stomach.

Case No. 2 has been referred to in speaking of the atypical forms of the disease. The case had run on to the sixth week, and had begun to convalesce, when, without my knowledge, solid food, in the shape of scraped beef, was given to the patient. Great distress followed and the patient suffered a genuine relapse, keeping him in bed a month longer. The beef was passed from the bowels unchanged.

I might report many more similar cases which occur to me as I am writing, but these two serve as a type of the cases I have seen treated with the "liberal diet."

In regard to the use of alcoholic stimulants in typhoid fever, I would say that I believe many lives are saved by the timely use of whiskey or brandy. To be of value, though, they should not be given until the advanced stage of the disease is reached, and only then when the irregular, wiry or dicrotic pulse indicates the impending failure of the heart. Stimulants should then be used freely and fearlessly. If given throughout the whole course of the fever, they prove of no value when we reach the real time of need.

In discussing the matter of treatment, nearly all writers consider the reduction of the temperature of the greatest importance, and base their prognosis upon, and derive their indications for treatment from the registering of the thermometer. Wilson in his great work says: "The main point in the management of enteric fever is to control the temperature." Bartholow, in his "Practice of Medicine," tells us that: "As the main point in the management of typhoid is to depress the temperature, the treatment directed to that end is the most important." Dr. George B. Shattuck, of Boston, in the "Reference Handbook," comes at the matter a little more gently, and, in speaking of the management of the pyrexia, says: "An evening temperature rising above 103° F. suggests the propriety of interference." In the face of these names, I hesitate to express my views on the subject. But I will say this, that I believe he who constantly keeps the thermometer in position and depends upon that as his guide in treatment, is simply watching one of the necessary symptoms of the disease, and may not only overlook more important symptoms, but will be likely to do harm by the use of the powerful heart depressants which will produce at best but a transitory reduction of the temperature.

I do not believe in the general use of antipyretics in the continued fevers. All the remedies of this class are either primarily or secondarily powerful cardiac depressants. Therefore, in a fever of typhoid nature, they are certainly contraindicated. The temperature is, of course, reduced; but, unless held down by repeated doses of the antipyretic, it will mount higher than before. The seemingly good effect produced by such remedies as antipyrin, acetanilide and phenacetin is, I believe, due not to their antipyretic action, but to their analgesic effect.

They merely serve to mask the symptoms for a time, but it is impossible that they can serve as an anodyne to the conscience of the physician who fully understands their action, and who has in mind not altogether the momentary relief of a symptom, but looks much farther and seeks the ultimate good of the patient entrusted to his care.

A remarkable result from the use of digitalis in a case of typhoid is worthy of mention here. A boy, aged eleven, had been suffering from an attack of the fever for ten days. The morning and evening temperature were nearly the same, having been running for six days at an evening temperature of 105.5° and a morning temperature of 104.5°. The pulse 140 and irregular. Digitalis was administered in the dose of one minim of the fluid extract every four hours. After four doses of the drug had been administered, I was hastily summoned to his bedside and found him in a state of collapse, and the temperature during this time had dropped from 105.5° to 97.5° — a fall of eight degrees. The pulse was 40 per minute. I certainly reduced the temperature and pulse in this case, but never was I more pleased than when I was again able to see the temperature of 105.5° recorded. No more antipyretics was given in this case, which went on to a final recovery.

It may be proper to speak here of the use of the cold bath, although it is not correct to class this remedy as an antipyretic. The good results obtained by the use of Brand's method, or some modification of it, is most assuredly not by the antithermic effect alone, as some writers would lead us to believe, but by the energizing effect upon the nerve centres, produced by stimulating the peripheral nerves with cold water. The cold bath is of positive value in the treatment of typhoid fever, and the inconveniences and expense attendant upon its use should not cause us to withhold it from our patient, who stands in mortal danger and demands of us all possible aid at our command.

The method by which we may gain indefinitely more knowledge of the patient's condition is by a careful observation of the *pulse*.

The time-honored habit of pulse study and pulse counting should not be neglected. For, by that best of all *sphygmographs*, the trained *finger-tips*, a knowledge of the condition of the circulation, of the force and nature of the heart's action, can be obtained. Here we may get our indications for increasing the amount of food or for the administration of stimulants, and gain knowledge upon which to base our prognosis.

The thermometer is undoubtedly an addition to our armamentarium, but its use should not displace other

methods of study which are really of more value. Various specific methods of treatment have been advocated from time to time, but, from our present knowledge of the disease, such methods can be of no scientific value.

When we become acquainted with the nature and habits of the typhoid germ, then we will have a foundation upon which to build a specific treatment. Many of the advocates of some so-called specific treatment claim excellent results, and it will be seen that many remedies are of much use. But it will also be seen that most of those drugs which seem to favorably modify the course of the disease belong to one class, namely, antiseptics. A treatment originated in Germany in which mercury and iodine were the specific remedies. Excellent results were obtained from the use of these drugs, the temperature range and condition of the bowels being favorably affected.

I believe this good result was produced by the antiseptic action of the mercury and iodine. As I have said before, the primary lesion is in the intestinal canal. Here is where the typhoid germ is first deposited, and from the ulcerative process here developed is derived the secondary or pyæmic fever characteristic of typhoid. Now, the treatment which will act as directly as possible upon the ulcerating Peyer's patches, is as near an approach to anything "specific" as our present knowledge will permit.

It now becomes easy for me to say that my method of treatment, after supporting the patient with the properly applied milk diet, and stimulants when indicated, is by antiseptics. By this I mean that the alimentary canal should be kept in an aseptic condition from the mouth to the termination of the intestine. Of this, the attention to the mouth is not the least in importance. Many remedies are suitable, and this gateway to the alimentary canal should be securely guarded, so that no septic matter can find its way into the circulation through this channel.

That part of the intestinal tract beyond the ilio-cæcal valve can be reached by antiseptic enemata, which should be used at least twice a day.

Of the medicines to be administered internally, the mercurials are in the first rank. Tablet triturates of calomel, or bichloride, in very small doses, are the form used. The combination of carbolic acid with bismuth or iodine is valuable, especially where there are marked bowel symptoms. Pepsin is an excellent antiseptic, and, where the digestive powers are weak, aids in the elaboration of the food.

In speaking of the necessity for thoroughness in our treatment, I would say that our antiseptics should be continued until the dejections from the bowels are safely deposited where infection from them is impossible.

The results obtained by this method of treatment in a fairly large number of cases are these: the diarrhœa is much less, seldom requiring the use of opiates; the temperature range is not so high, and the tendency to complications is not so great. I do not believe any method of treatment now known will cut short the course of typhoid fever, but this method seems to me more rational than to savagely attack one of the many symptoms which are, in most cases, the necessary accompaniment of the disease.

In regard to treatment, then, I have only attempted to show that a conservative method, based upon what little real knowledge we have of the fever, is of more value than the uncertain use of potent drugs which, while they for the time being seem to relieve one symptom may do the patient positive harm.

It may be said that I have simply done the work of a vandal, and have destroyed the idols which have been so long worshipped, having substituted but little in their place. But I firmly believe that, not only in this, but in all diseases, the time has come when thoughtful physicians say that we must use less, much less, medicine, and when administered, it should be with a definite purpose in view and in the smallest possible dose.

Although we are standing on the verge of marvellous revelations as to the cause of disease, and in a quarter of a century from now this labored essay would not be worthy of your consideration, yet, at the present time, our best results will be obtained by making use of the first steps which have been taken in our knowledge of this disease, and being extremely conservative in instituting uncertain and unscientific measures.

And I believe that the greatest step that has been taken within the last decade is in learning what not to do; in learning to place less confidence in the curative power of drugs, and watching more closely the indications of nature, standing ready to render all needed aid.

Our typhoid patients' surroundings should lack nothing to render their sanitary condition perfect, and the supporting and absolutely antiseptic treatment should be untiringly pursued.

I can close this paper with no better words than those of the immortal Jenner. He says: "My experience has impressed on me the conviction that the man will be the most successful in treating typhoid fever, who watches its progress, not only with the most skilled and intelligent, but also with most constant care, and giving *unceasing attention to little things*, and who, when prescribing an active remedy, weighs with the greatest accuracy the good intended to be effected against the evil the prescription may inflict, and then, if the possible evil be death, and the probable good short of the saving of life, holds his hand."

THE BACILLUS OF TYPHOID FEVER: ITS OCCURRENCE AND SIGNIFICANCE.[1]

BY JOHN A. JEFFRIES, M.D., OF BOSTON.

In 1882 Eberth announced that certain groups or colonies of short bacilli could be found in the Peyer's patches, lymph glands of the mesentery, spleen and other organs of those dead of typhoid fever. Meyer reported shortly after on the subject, and added much weight by showing that such groups of bacteria existed in nearly all cases of typhoid fever. This was before the general use of aniline dyes and solid culture media.

Next Gaffkey showed that these groups of bacteria could be stained by long immersion of sections in solutions of methyline blue and washing in acidulated water. He also showed that the plant could easily be grown at room temperature, and that the cultures were quite different from any known at that time. The plant grew as a bacillus with rounded ends, was endowed with the power of motion, and apparently formed spores. Gelatine was never dissolved; the deeper parts of the shaft were beaded and slightly brown in color. The growth on potato was regarded

[1] Read before the Massachusetts Medical Society, June 9, 1891, and recommended for publication by the Society.

as a diagnostic character, the peculiarity being extensive growth as shown by the microscope, yet nothing to be seen by the naked eye except a slight shimmer or difference in texture when looked at in a favorable light.

Koch and others soon demonstrated not only that the bacillus occurred regularly in all active cases of typhoid, but also that it could not be found in those dead of other diseases. This put the subject in such a position that a few years ago one spoke of the typhoid bacillus as quite a settled matter. To-day we do not know half as much as then. The very individuality of the plant has been questioned. The difficulty has come from the discovery that a large number of bacteria exist which grow on potato just like the typhoid bacillus, and that some plants identical in all the culture characteristics given by Gaffkey are not so very rare, and occur in the stools of people with intestinal disease. As a result, the Eberth bacillus has been cultured in a great variety of ways, and subjected to a very close scrutiny, in the hope of discovering some character or group of characters by which it could be positively recognized. So far all efforts have been futile. If Babes is correct in his observations, there are a host of other bacteria, either closely allied species or varieties, which occur in man and chiefly in man with typhoid fever.

Even yet the difficulties of the case are only half related; the Eberth bacillus is a protean form, and varies much in its shape, form and manner of growth, with minute changes in its surroundings,—as temperature, degree of chemical reaction, and composition of the media. Therefore, to-day, to demonstrate that a bacillus is identical with Eberth's, it is necessary to compare it step by step, culture for culture, under precisely the same conditions with an undoubted culture, and to have derived the original supply from a case of typhoid.

The above conditions can be fulfilled in practically every case of typhoid fever which has died before the disease has passed off, and the original microscopic findings can be verified in the same way. Those conditions have never been fulfilled in a single case of other disease. We are, therefore, justified in claiming the existence of a peculiar bacillus or bacillus group in every case of typhoid. This is the ground on which the claim of the typhoid bacillus depends. It rests on the same evidence as the spirillum of relapsing fever, the plasmodium of malaria; both are always to be found in their respective diseases, never in health or other diseases. It is, therefore, clear that the typhoid bacillus and typhoid fever stand in some sort of causative relation; things which vary together, are connected causatively. From analogy and the improbability that the bacilli are the result of a secondary invasion, the bacillus is commonly accepted as the cause of the disease. No careful student claims this as proved, neither is the law of gravitation.

A few authors have attacked the integrity of the bacillus, and argued that typhoid fever is a condition, and the bacillus in reality a variety of species, as in the summer diarrhœa of infants. Others hold that the plant is simply a modification of a common denizen of the intestine. But epidemiology and clinical study point so clearly to a specific disease transmitted from case to case that I do not think these views need be entertained, at least until their supporters produce some substantial evidence.

The distribution of the plant in the body bears a close relation to the nature of the disease. First, it occurs in the substance of the swollen Peyer's patches, before these have sloughed, not simply in the mucosa, but in the round-cell aggregations. After the surface has become eroded and an ulcer is formed, the surface becomes literally coated with all sorts of bacteria, cocci, streptococci and bacilli; among the latter there is often a rather long bacillus, which Klebs at one time held to be the cause of the disease. Evidence, however, points to its being distinct from the typhoid bacillus. It only occurs on and in the surface of the erosions, not deep in the tissue. Nearly if not quite simultaneously with the appearance of the bacillus in the follicles, the lymphatics of the mesentery swell and show nests of the same bacillus. The nests contain from fifteen or twenty bacilli to hundreds, and form a mass varying in size from that of a nucleus to one very much larger. The centre is apt to appear almost homogeneous or finely granular; but the circumference clearly shows short, straight, irregular looking bacilli. The irregular appearance is due to parts of the bacilli staining less than the rest.

The spleen shows precisely the same state of affairs. According to the duration of the disease and other factors, the number of colonies vary greatly. In advanced cases, even two hundred sections may be examined before a colony is found. From this their prevalence runs up to as many as fifteen or twenty in a single section.

So far the colonies have been described as being in the tissue, between the cells, not as bearing any particular relation to the blood-vessels or other parts. To this the liver offers a contrast. Here the plant is apt to occur in the form of distinct thrombi, which have grown from minute emboli.

In the kidneys the colonies occur chiefly in the cortical portion; are often present, at times abundant, but apparently are not present with the same regularity as in the spleen.

Besides the above organs, the typhoid bacillus may be found in most any part of the body. Thus it is apt to occur in those cases of lobular pneumonia which so often complicate cases of typhoid. It has also been reported as existing in the meninges in cases of complicating meningitis, and in abscesses in such different parts of the body as the parotid glands and the tibiæ. At times the bacillus is found alone, but mostly in company with some accepted pus-producing bacterium.

Numerous examinations of the blood in all stages of the disease have been made, and observers have reported positive results, especially from material procured by opening a rose spot. Others have failed. That the plant can occur in the blood, the emboli in the liver demonstrate; nevertheless, none of the observations are above question; many simply depend on the microscope and are absolutely worthless; others are supported by cultures, but in no cases have these been carried to that degree of fineness and accuracy necessary to establish, even a probable diagnosis. Examination of the blood in doubtful cases for purposes of diagnosis is therefore a failure, and until our knowledge is greatly improved must remain so. Provided the typhoid bacillus was found, its positive recognition would require so much time that the practitioner would take but little interest in the result.

All the above remarks apply to the search for the bacillus in typhoid stools; it may be there or it may

not. Many claim to have found it, many have failed. The difficulties are enhanced by the enormous number of bacteria in fæces, and the occurrence of many typhoid-like bactera in the intestines of typhoid patients. All sorts of ready methods of isolation have been recommended, but none have stood the test of time. The only feasible method is to make plate cultures from the stools and then search for the desired colonies. These have nothing characteristic about them, are variable, so that in searching for the typhoid bacillus plates of pure cultures of the typhoid plants must be made to serve as a control and comparison in each case. Even then the amount of error is large. Lately word has come that a regal road to the typhoid bacillus was found. All that is necessary is to use agar and put the plates in the thermostat and presto! the next day, thanks to the warmth, the typhoid (pathogenic) bacteria have developed finely, while the others, not liking heat, are retarded in development. Beautiful, but mistaken. All or nearly all the germs in the intestines thrive better at 98° than at 68°. There is nothing new about the method except the theory; by it we hasten development, and avoid liquefaction: on the other hand we lose the signs of the only absolute fixed character, non-liquefaction of gelatine, and run a considerable risk of killing the plants we want to study.

Considerable attention has been paid to the urine in cases of typhoid, and the weight of evidence seems to indicate that the bacillus is quite liable to appear in the urine when it contains albumen, that is, quite early in the course of the disease. As yet, however, the universal doubt which hangs over most everything relating to the typhoid bacillus weighs heavily. More evidence and closer work is needed before positive statements are justified. Reasoning from analogy, and the presence of the bacillus in the kidneys, their occurrence in the urine seems most probable.

The only other method of utilizing the bacillus for diagnostic purposes is that of tapping the spleen. This has been done on several occasions and the method is spoken of as a success. Probably none of us, however, would be willing to have our own spleens tapped for the sake of a diagnosis.

So far only the distribution of the bacillus in the body has been considered. There yet remain the relations of the plant to the cell changes and the result of animal inoculation. As to the latter the weight of evidence is that the plant is not pathogenic in any of our experiment animals, certainly is not capable of producing any disease similar to typhoid fever. The inoculation of large amounts kill a certain proportion of the smaller experiment animals, but this is evidently the result of various poisonous principles introduced, and not due to the multiplication of the bacillus in the body.

In man there are certain focal or localized cell changes, over and above the diffuse changes which are more or less characteristic of the disease. Thus we have certain small round-cell accumulations in the parenchyma of the various organs,— the so-called typhoid lymphomata, and also certain other patches characterized by the loss of the staining qualities of the cells, their partial atrophy and the splitting up of the nuclei into two or more strongly staining bodies. The final result is an almost homogeneous mass, in which close study may reveal the ghosts of the cells, through which are interspersed a number of deeply stained highly refractive small bodies, the remains of the nuclei and some connective tissue cells. These two processes, though presenting similar optical appearances, and until recently grouped together, are in reality distinct. The first is a demonstration of life, the other of death. The same or a similar process is to be recognized in various parasitic diseases. At the present time no direct or rather topographical relation has been made out between either processes and the colonies of the typhoid bacillus. The tissue directly surrounding a colony may appear precisely like the body of the organ, or it may be altered in either of the above ways.

Again, either alteration may take place without any recognizable bacilli, so that allowing the pathogenic qualities of the plant we must attribute these changes to the general state of the body, as secondary manifestations rather than primary.

Wherever the bacillus is found it is not in the cells but between them. This shows very clearly about the borders of the colonies; at times a cell can be recognized in the thick of the bacteria. What becomes of the cells which occupied the places of the colonies I do not know; they must be either pushed to one side, digested, or simply obscured—very likely all three.

If the reported cases of the detection of the typhoid bacillus in stools and urine are correct — probably some are and some are not — we have an ocular demonstration of their mode of dispersion preparatory to reinfection. In my own mind there is no doubt but that the germ escapes from the body in one of, or both, these ways. With this point in mind, much work has been done calculated to show how long the typhoid bacillus can exist in dejecta, the ground, and water. Most experimenters have concluded that the time was rather short, the typhoid plant being crowded out by the other germs. This sort of work, however, is not productive of much good; our experiments will never equal those of nature. The answer to this problem is best found by a study of the numerous local epidemics of typhoid where the source is known, not in the bacteriological laboratory. Though no spore is produced, the time will be found quite long, — longer than might be expected of a plant which apparently is incapable of a prolonged independent existence.

What we want to know is how to sterilize the dejecta. The urine is easily cared for. A moderate amount of carbolic acid and time will do it. It is my custom in all cases of parasitic disease to have some antiseptic as carbolic acid always kept in the receptacle for the urine. When dissolved, corrosive sublimate is very effective, but where much albumen is present I have been afraid to rely upon it. The stools are not so easily dealt with; corrosive is not at all reliable. Carbolic acid in strong solution, so as to produce a three per cent. solution when intimately mixed with the dejecta, is safe. Just pouring some carbolic on and poking the mass with a stick will not suffice. Fæces are very difficult to sterilize. Some simple sort of oven or stove in which dejecta could be dried and burned is a great desideratum. Our large cities are supposed to see that the sewer waste is not dangerous; in smaller places out-door space for such an apparatus is most always at hand.

A word as to the examination of drinking-water. The epidemiologist attributed a prominent rôle in the spread of typhoid to water contaminated with dejecta long before the bacillus was found. Time has only strengthened this position. Of course, therefore,

many searches have been made for the bacillus in water — and what could be more natural than to find it? Yet Koch recently said that all reported discoveries of the typhoid bacillus in water must be accepted with reserve. It may have been found, but as yet the requisites of a demonstration have not been produced. Very much the same may be said of milk. Outbreaks of typhoid are occasionally apparently due to the consumption of milk contaminated with infected water.

In closing we have good reason to believe that Eberth's bacillus is a species and the cause of typhoid fever; that it escapes with the dejecta and after spending a variable amount of time at large is liable to gain entrance to another individual and reproduce the disease. Lastly that a large number of unjustified conclusions as to the finding of the bacillus in nature have been given to the profession under the guise of bacteriology. Some of the records may be correct, none are beyond doubt, and few are really worthy of consideration.

MENTAL DISTURBANCES OF INFLUENZA.[1]

BY J. B. AYER, M.D., OF BOSTON.

INFLUENZA, in my experience, became epidemic December 20, 1889, though I feel that I saw one case of influenza-pneumonia which was fatal, November 9, 1889.

At the end of seven weeks fewer patients were seen, but sporadic cases of influenza continued to appear throughout the year and up to midwinter, when the presence of the epidemic again became very marked, and has continued till the present time.

During the last four months of this "relapse" the *pandemic character* of the previous year was absent, the disease this time seeking out one neighborhood after another and exhausting its force more leisurely.

Dr. Rush's description of influenza as it appeared in Philadelphia in the autumn of 1789 (lasting six weeks), relapsing in April, 1790 (remaining till the early part of June), and ending with a mild relapse the following winter, is of value and of great interest now, as the epidemic which occurred just one century ago resembled ours with this exception, that the *nervous and mental symptoms did not have the prominence in the affection which they hold to-day.*

Probably, however, some recent authorities have overrated the importance of these symptoms. It does not seem to me possible to prove the claim that the disease is *essentially* an epidemic *Nervenkrankung*, observation showing that the influenza-germ seeks out the weak part of the human system, and that to-day the nervous system is obliged to bear the brunt of the attack more than it did a century ago, for the same reason that so many diseases have in that time tended to assume an asthenic, nervous type.

Dr. Clouston, in summing up an investigation of 140 cases of influenza among patients and attendants at the Royal Asylum, Morningside, concludes that "any sharp division of the symptom is artificial, and by no means accurate."

He found the patients complained as follows:

With Neuro-Muscular symptoms	97.1 per cent.
With Respiratory symptoms	77.1 per cent.
With Alimentary symptoms	55.7 per cent.

I found this table very similar in results to an analysis made at the Home for Aged Colored Women in this city.

The 21 inmates (aged from sixty-one to ninety-three years), including the matron, escaped (with two exceptions) last year's epidemic, but were attacked this year —one on February 22d, the others between March 7th and 20th.

Thirteen inmates were severely attacked (one died).
Five inmates were moderately ill.
Three inmates were not confined to the bed.

The prominent symptoms, expressed concisely and in order of importance, were those of

Depression (6):	
Depression (feared insanity)	1
Depression and irritability of temper	1
Depression and cephalalgia	4
Pain (4):	
Cephalalgia	1
Cephalalgia and cough	1
Cephalalgia and "grip-like" pain in chest,	1
Pleurodynia and prostration	1
Cough (4):	
Cough	2
Cough and depression of spirits	1
Cough, weakness and pleurodynia	1
Vomiting and gastralgia	1
"Dizzy head" and gastralgia	1
Prostration and depression	1
Prostration connected with pneumonia or pleurisy	4

In two cases of partial dementia there was no increase of brain disturbance. One case died from pneumonia and co-existing phthisis.

Two months have elapsed, but, as yet, only two of the inmates are in as good general condition as before the attack. A diabetic patient, who has been growing infirm for many months, a fortnight after the disappearance of marked symptoms of influenza developed choreiform movements of left side, principally confined to left arm: symptoms now disappearing.[2]

I was forcibly struck with the fact that a large proportion (6 out of 21) of these patients remembered most vividly, and with the greatest dread, the symptom of mental depression in connection with their attack. Adding to this number those who complained principally of pain and prostration, we find that with many patients the nervous system bears the brunt of an attack of epidemic influenza.

I have seen several cases this season in practice, many more than last year, illustrating different degrees of mental disturbance in influenza, and I will refer to them briefly.

Insanity requiring Hospital Treatment.—I have met with one case of transitory mania where recovery occurred in four weeks. This was the third attack, but recovery was more rapid and satisfactory than before. The mental symptoms appeared early in the course of well-marked influenza, and were prominent on the seventh day. Influenza began suddenly at the supper-table with sharp pleurodynia.

Most hospital cases of influenza-insanity have the melancholic-hypochondriacal form, with favorable prognosis. The duration is often unusually short — even for post-febrile insanity.

Psychoses not requiring Hospital Care.—I attended a young lady who showed decided mental instability for twelve days, in connection with an influenza relapse where cephalalgia and fever were the prominent symp-

[1] Abstract of a paper read before the Medico-Psychological Society, May 21, 1891.

[2] At the end of a few weeks the left-sided choreiform movements, which had subsided, again became marked and still continue. They are of organic cerebral origin undoubtedly.

toms. The patient wandered in mind, turned against her friends, was notional, fault-finding and pre-occupied during this time. For several days it was difficult to make a diagnosis and prognosis. Typhoid fever and kidney complications were eliminated, and symptoms were found to be clearly due to influenza and neurasthenia. Complete mental recovery at the end of a fortnight, physical condition improving steadily.

I have seen a case where there has been a marked change in disposition and temperament, together with a difficulty in articulation, following influenza characterized by severe cephalalgia and profuse nasal catarrh, which has been treated at home. Sufficient time has not elapsed to form a satisfactory judgment, but I feel that we are warranted in giving unusually hopeful prognoses in influenza cases.[5]

Influenza - Meningitis with Coma. — A patient, fifty-five years of age, contracted malaria in 1862, in army service. He was not in robust health when, on Christmas Day, 1889, he was prostrated by influenza. Cephalalgia was a prominent symptom, and he complained that his head did not feel right up to April 2d, when he was seized with severe headache, on the right side, which appeared at frequent intervals during a fortnight and was followed by convulsions, hemiplegia, and coma, causing death on the twenty-fourth day. There was no kidney trouble. Dr. Jelly, who saw the patient with me, agrees in attributing the symptoms to meningitis following influenza.

A case directly connected with influenza is that of Mrs. ——, forty-four years of age. Two years ago a large abscess, which had slowly formed over the lower lumbar vertebræ, was opened by Dr. M. H. Richardson, who on later occasions removed carious bone from the vertebra, a small sinus remaining.

Patient was in feeble health when attacked by influenza, the second day of the present month. The early symptoms were those of excruciating sciatic neuralgia, chilly sensations, and febrile disturbance (102°); a few days later there was severe cephalalgia. On the 13th there was severe prostration, but less pain and delirium, and I saw nothing about the symptoms which made me feel that there was immediate danger. On the 14th she had a sharp chill, with severe cephalalgia and general pain, and also hallucinations of sight and hearing. There was profuse, clammy perspiration following the severe headaches. She became deaf and inattentive. There were frequent chills followed by fever. On the 13th there was a state of partial stupor. Head was very hot, cephalalgia continuing till stupor was more marked. After the morning of the 17th she could not be aroused. Irregular respiration was a marked symptom, and paralysis of left arm was marked. Examination of the urine showed that the symptoms were not of uræmic character. She died on the 18th, sixteen days after first symptom of influenza.

The Reports of the New York State Board of Health show a large increase of deaths from all forms of nervous disease monthly (when compared with previous years) since the first appearance of the epidemic.

The Mortality-rates of the City of Boston do not confirm the view that fatal cases from mental and nervous disease have increased during the past sixteen months, excepting that cases of apoplexy and suicide have been more numerous than usual.

[5] The patient, however, died three months later suddenly from cerebral apoplexy.

Delirium during the Attack of Influenza was quite common, and was generally of an asthenic character and transient. The patients could be easily recalled from wandering, Syncope occurring at the outset of an attack did not seem to be an unfavorable symptom.

In Pneumonic Complications delirium was often protracted, and of longer duration than is usually seen in ordinary pneumonia.

Delirium (with Gastric Symptoms) preceding the Febrile Symptoms of Influenza.— A case illustrating the fact that the diagnosis may remain in doubt for several days, is that of a boy, nine and one-half years of age, who was prostrated on the 4th instant with obstinate bilious vomiting. He was a precocious child, and had a large head, but never complained of any troubles except bilious attacks and constipation. Following two days of persistent vomiting, he became mildly delirious. He complained of pain extending from the umbilicus to the ensiform cartilage, and worried about himself, especially about his heart, maintaining that he felt that organ "hanging down," and beating too rapidly.

Frequent vomiting, local hyperæsthenia, and occasional delirium continued till the 10th instant, before there was any rise of temperature or any other proof of influenza. From the 10th to 13th the temperature fluctuated between 100° and 102°; the delirium was more constant, but was of a quiet type. Occasionally he had hallucinations of sight, but would smile when he was corrected regarding his fancies, readily recognizing his mistakes. He worried a good deal about heart disease up to the 14th instant, but has since been clear in mind, and is now out of doors.

Influenza causing Neurasthenia and Apprehensiveness.—Our local experience has borne out the testimony of Dr. Clouston, that "the year 1890 has been depressing in its conditions to the nervous system, the epidemic of the preceding winter having left the nerves and spirits of the people in a worse state than it found them."

Rheumatic and dyspeptic complaints, with prolonged depression of spirits, have not been uncommon. I have in mind a case of rheumatism where for more than a year the feeling of apprehensiveness has been out of all proportion to the importance of the rheumatic symptoms. I recall two cases, both elderly people, where the persistency of dyspeptic symptoms with hypochondria made me consider seriously the question of serious gastric disorder, but where epidemic influenza was to blame for the obstinacy of the disorder.

The neurasthenics have been the greatest mental sufferers of the epidemic. The feeling of apprehension has not been confined to adults, as was illustrated by the case of the boy who was worried about his heart. During the past year I had considerable difficulty in convincing a girl, ten years of age, that she did not have heart disease. Worry of this nature in young children I have never previously encountered.

Influenza modifies nearly all diseases at the present time, and its influence, especially upon the nervous system, must be considered in every case. All who have attempted the study of the epidemic will agree with the statement in the last number of the *British Medical Journal*, "In spite of considerable increase in our knowledge of the behavior of epidemic influenza gathered during the past year, much still remains mysterious."

Other cases come to mind of nervous disturbance and

depression, which I firmly believe (but perhaps cannot prove) to have an influenzal origin. There come notably under this head cases of slight injury, where the symptoms are strangely protracted, and the prostration excessive, which may be due, in my opinion, to the co-existence of influenza.

Clinical Department.

DIPSOMANIA.

BY LUCIUS W. BAKER, M.D.
Superintendent of Riverview Sanitarium for Nervous Invalids, Baldwinville, Mass.

NOT long since I had under my care a young gentleman, twenty-six years of age, belonging to a refined, intelligent family. His father was a moderate drinker, and died in middle life of Bright's disease, bequeathing to his child an unstable, nervous organism, which predisposed its unfortunate owner to some form of mental or nervous disaster. The earlier history of the patient is one of alcoholic excess, later occurring periodically, when the desire for stimulants would be irresistible. He would pawn his clothes or do anything to satisfy the craze for intoxication.

During these periods, if denied alcohol, there would be complete loss of appetite and inability to sleep; his eyes would become bloodshot; his gait staggering; his conversation would be voluble, silly, and incoherent, and delusions would often be present. In short, he would at times present all the phenomena of intoxication without having, to my certain knowledge, partaken of a single drop of alcohol.

The symptoms presented by this patient are clearly indicative of a profound disturbance of the nervous system, which manifests itself by an intense periodical craving for intoxication. They are similar in their origin to those morbid impulses to commit theft, set fire to buildings, etc., which are occasionally met with, and like these are due either to a loss of controlling power in the higher cerebral centres, or to an excessive morbid accumulation of nervous energy which exceeds the normal controlling power of the individual.

The distinguishing characteristic of these disorders is a morbid and irresistible desire to perform certain acts without the presence of any positive delusions; while varying in their manifestations, they are generally periodical in their occurrence, and are dependent upon an unstable condition of the brain cells, which may be acquired but is generally inherited.

Especially is this the case in that intense periodical craze for intoxication known as dipsomania, which Dr. Spitzka has defined as "A form of periodical insanity manifesting itself in a blind craving for stimulant and narcotic beverages." In nearly every case of dipsomania careful study will detect some impairment of brain or nerve tissue, some imperfection of cerebral element, which in the majority of instances antedates the desire for alcohol.

During the intervals between the drink paroxysm the dipsomaniac has usually no desire for alcohol, indeed it may be actually repulsive to him. He may then sign the pledge, and make most strenuous efforts to reform; but during the attack all his powers of control, all his manhood and self-respect are overwhelmed by the craving of the nerve centres for intoxication. Nothing but absolute physical restraint will prevent excessive indulgence. For the time being, the man's whole moral tone is changed, and he will often seek the society of the low and degraded with whom he would never dream of associating under any other circumstances.

These changes of character, these overpowering impulses for intoxication, with intervals of total abstinence, are symptomatic of an intense disturbance of brain function, and characteristic of dipsomania.

The dipsomaniac is the victim of a distinct neurosis, which is very closely allied to insanity. He should not be confounded with the confirmed inebriate in whom the desire for alcohol is nearly always present. The latter often indulges to excess, and may become intoxicated, but he does not present the characteristics of dipsomania.

It is true that a genuine case of dipsomania is seldom met with in contrast with the number of confirmed inebriates, but it is none the less important that the characters of the disease should be promptly recognized and intelligently treated. During a paroxysm of dipsomania the individual is really insane and irresponsible for his acts, as much so as a case of acute mania. To regard him as a moral delinquent, and subject him to moral means alone for his relief is unscientific, and reminds one of the time when insanity was regarded as an indwelling evil spirit, to be driven out by chains and the lash.

We may as well expect the suicidal maniac to observe a promise not to take his own life as to expect a man to voluntarily refrain from the use of alcohol during an attack of dipsomania. Both are diseased, both need restraint and intelligent medical aid.

The first step to be taken in dealing with the dipsomaniac is a recognition of his diseased condition; when this is acknowledged, dipsomania passes from the domain of morality which it has held so long, and becomes a proper subject for the consideration of the physician. The dipsomaniac, unable to resist the terrible drink craving, will then no longer be regarded as a moral delinquent, but as a sick man needing special medical care. This, as a rule, can be best obtained in institutions devoted more especially to this class of cases, and in charge of physicians who have made special study of the various forms of inebriety.

Reports of Societies.

MEDICO-PSYCHOLOGICAL SOCIETY.

MEETING of May 21, 1891.

DR. JAMES B. AYER read a paper on

MENTAL DISTURBANCES OF INFLUENZA.[1]

DR. FISHER said that there were many cases of influenza among the staff and employees last year while the patients, for the most part, escaped. This year some of the patients had been affected. He spoke of a woman of sixty, nervous and with uterine troubles. At the climacteric she had been haunted with the idea of pregnancy, which constantly recurred associated with excessive sexual feeling. The idea of being alone with a man would suggest pregnancy. She recovered and remained well for ten years. After the influenza, she had insistent ideas — not of pregnancy, but chang-

[1] See page 294 of the Journal.

ing. One idea was that she saw snakes in the grass, and the idea of verdure would cause a shock, creeping sensations and erotic feelings. The same feelings occurred if she saw a hat trimmed with green. She probably had no hallucination of sight or hearing, and eventually recovered.

Dr. Baker spoke of a case of melancholia with agitation which followed an attack of grippe.

Dr. Webber thought that cases of grippe would tend to produce melancholia when there was sleeplessness, and where the digestive organs were affected. He spoke of one of his patients who could only eat in the morning, and had nausea and vomiting in the afternoon, associated with sleeplessness and depression. One patient had depression after three nights of only two hours of sleep, but recovered her spirits after a good night. One patient, during an attack of grippe, had a curious state of mental neurasthenia; was fault-finding and complaining. When she recovered, she recognized this change of character. He had only observed depression, but could understand how it might proceed to melancholia.

Dr. Knapp had seen but one case of insanity from influenza. There seemed to be a lowering of the plan of nervous energy, increased neurasthenic symptoms, and mental depression.

Dr. Lane had seen more cases of grippe among employees than patients. It could not be strange to get mental symptoms among the insane. In one dement there was prolonged delirium during the grippe, with lowered tone of the whole system. Physical recovery was followed by mental improvement.

One of his friends had been left in an emotional state so that the ringing of the door-bell would move her to tears.

Dr. Holt spoke of two patients actively suicidal who were admitted to the hospital. In both the grippe was supposed to be the exciting cause of their mental sickness. Both recovered.

NEW YORK STATE MEDICAL ASSOCIATION. FIFTH DISTRICT BRANCH.

(Concluded from No. 11, page 276.)

Seventh annual meeting, held in Brooklyn, May 26, 1891, the President, Stephen Smith, M.D., in the chair.

AFTERNOON SESSION.

The President delivered his address, his subject being

OPIATES IN THE TREATMENT OF ACUTE PERITONITIS.

He commenced by quoting from Prof. Alonzo Clark's account of the outbreak of puerperal fever at Bellevue Hospital, in the year 1851, given in the article on Peritonitis in his "System of Practical Medicine." In speaking of the latter, Dr. Clark says: "In three or four days seven cases were sent to me from the lying-in wards. One was returned for error in diagnosis, and six put under treatment. Having found that prudence was so much more conspicuous in my house-physician than courage, another house-officer, who combined them both, was selected to be in almost constant attendance. The instructions were in these words: 'I want you to narcotize those women within an inch of their lives.' He did it, and saved every one of them. This gentleman is now known over the whole land as a learned and distinguished surgeon. I feel called upon to give his name in this connection, that he may be a witness to the facts I state, and for the admiration with which his nerve and prudence impressed me."

Dr. Smith said that notwithstanding this assertion, Professor Clark failed to give the name of the surgeon referred to, but as he himself was then a resident in Bellevue Hospital, and had charge of the six cases mentioned, he assumed that he was the person meant, and would take this occasion to witness to the facts thus recorded. He then gave a very interesting account of the slow elevation of Bellevue from a prison and almshouse into a hospital purpose. The buildings, erected in the early part of the century, and built chiefly on ground reclaimed from the river, were very massive in construction, but without under-drainage or sewerage. All forms of contagious and infectious diseases were received into its crowded and ill-ventilated wards, and at various times yellow fever, typhus and typhoid fevers, small-pox and cholera were the prevailing diseases of its inmates. In 1846–7 there came a complete change in the administration of the institution by the selection of a competent medical board and the final retirement of the resident physician, whose appointment had been purely political, and who had been the sole authority in managing its general and medical affairs. At this latter date Bellevue, as an organized hospital, had its origin. There was, however, comparatively little improvement in the sanitary condition of the hospital buildings for many years. Gradually, better ventilation was secured, and the general cleanliness of the wards and beds was improved.

Having given a more particular account of the lying-in wards, he said that the mortality from puerperal fever was appalling. Of 21 cases reported by Dr. Vaché, the resident physician in 1840, 19, or nearly 90 per cent. proved fatal; nor was this death-rate unusual at that period. He gave a *résumé* of the records of the autopsies in these 19 cases, made by Professor Clark, and said that these records were more or less accurately repeated on every recurrence of puerperal fever at Bellevue between the years 1840 and 1851. The treatment was so mixed that it was difficult to draw any conclusions as to the efficiency, or rather inefficiency, of any one remedy. Still, it was noticeable, that purgatives were actively employed in 17 of the 21 cases, and that in 5 cases the purgative was salts. In the other cases, calomel and turpentine, two approved antiseptic remedies, were administered freely. Opiates in the form of opium and Dover's powder were given in most cases, but in small and occasional quantities. Professor Clark truly said: "Up to the time when the opium treatment was adopted peritonitis was a fearful word; a large proportion of those attacked by it died of it."

Dr. Smith described in detail the treatment of the six cases placed under his charge by Professor Clark, who gave the most particular directions as to their care. He was required to see the patients every hour, and in regard to the opium he was not to be governed at all by the amount administered, but by the effects produced. He was to closely watch the pulse and respiration, and while the respirations might fall to 12 per minute they were not to be allowed to go below that figure. At the outset, each patient received one grain

of opium every hour, for three doses. No effect being perceptible, the dose was increased to two grains every hour, and continued for three doses. Failing with this dosage, the opium was increased to three grains every hour. In four cases this amount of opium had the desired effect, and it was continued in that amount. In the remaining cases it had to be increased to four grains every hour. One of the remaining cases yielded to this amount, and the opium was continued at that rate. The other, or sixth, case was much more obstinate, and the opium was steadily increased until the dose reached twelve grains every hour. This case proved an anomaly in tolerance of opiates. During twelve days the patient took the equivalent of 1,950 grains of opium, and yet at no time was she so narcotized that she would not awaken when any one placed his hand on her wrist.

The recovery of these six consecutive cases of puerperal fever naturally produced a profound impression. As the cases were typical of those ordinarily occurring in this hospital, and as opiates were the sole remedies used in their treatment, it was apparent that a new era in the treatment of that scourge had begun.

From this time forward opium continued for twenty years to be the chief remedy employed in peritonitis in Bellevue Hospital, and with satisfactory results. Opium in peritonitis came into use generally in the city, and Professor Clark stated that in private practice the drug had been perhaps more curative than in the hospital. With the introduction of the opium treatment the mortality from puerperal peritonitis in Bellevue was reduced certainly fifty per cent.; and this fact led inevitably to the conclusion that this treatment has a place in the therapeutics of that affection of no small importance. Precisely what that position was, it was perhaps impossible now to state. Professor Clark regarded opium as valuable chiefly in simple, uncomplicated peritonitis; and yet the clinical features of the six puerperal cases which recurred resembled in all their essential peculiarities the fatal cases reported by Vaché, in many of which the inflammation of the uterus and its appendages was the dominant lesion.

Happily, in these latter days, Dr. Smith went on to say, antisepticism had greatly diminished the frequency of this formidable disease, especially the puerperal form, and in the meantime the remedial measures had been greatly increased. Modern research had shown that peritonitis not due to putrefactive organisms was local, while peritonitis produced by such pathogenic microbes as staphylococcus aureus was rapidly fatal by general infection. One of the most important results of recent investigations was the differentiation of the types of peritonitis caused by various agencies; and as there were many types of this affection, having their causation in various conditions (some being of microbic, and others of non-microbic origin), it was as yet by no means certain where the line was to be drawn between the medical and surgical treatment. It was probable that the physician and surgeon would more wisely treat the multiform types of peritonitis by acting in concert, and discretely employing the measures which each possessed according as they might jointly interpret the indications.

Whatever might be the possibilities of the art of surgery in the treatment of peritonitis, the question might be pertinently asked, Has any remedy, or combination of remedies, in the hands of the physician, given results equal to, or better, than opium in a series of cases similar to those recorded in this paper? And if it be true that by employing opium, as recommended by Professor Clark, more than fifty per cent. of cases of peritonitis, as met with in practice, can be saved, should not this method of treatment be at once adopted in all cases, and the resources of surgery be applied where the manifestations of the disease indicate the necessity of its additional remedial measures?

DR. A. L. CARROLL remarked that it was noticeable that the advocacy of saline cathartics in peritonitis came, as a rule, from the abdominal surgeons, such as Lawson Tait, for instance. It seemed to him, however, that the peritonitis sometimes following operations was very different from the septic peritonitis of puerperal fever, it almost always came back again. In puerperal peritonitis, which was at first visceral, and afterwards extended to the parieties, opium was in his opinion strongly indicated, as it quieted reflex irritation and prevented the rubbing upon each other of the inflamed surfaces. Here he would give an occasional mild cathartic in connection with the opium. The enormous distention of the abdomen seen in some cases of peritonitis, indicated, he thought, an effort to get rid of something; and in such cases good results have been obtained from the moderate use of purgatives.

DR. J. W. S. GOULEY said that he was able to add two cases of recovery from puerperal peritonitis under Dr. Clark's treatment at Bellevue Hospital, to those which had been given in the paper. They occurred in the year 1853, when he was an *interne* at the hospital, and he had charge of them under Dr. Clark. The opium was pushed to such an extent in these cases that the respiration was kept down to between six and nine a minute.

DR. T. H. MANLEY referred to the discussion on the management of peritonitis in the Surgical Section of the American Medical Association at the Newport meeting, and spoke of the extreme opposition with which everything in the way of palliative treatment was met. His own experience, however, had led him to regard the opening of the peritoneal cavity as a more serious matter than many seemed to consider it; and he believed that in the next ten years there would be fewer laparotomies performed for the relief of inflammatory conditions than had been the case during the past ten years.

DR. WM. MCCOLLOM spoke of his early experiences in Vermont, where he said there used to be a good many cases of acute peritonitis which were not of puerperal or septic origin, but belonged to the variety known as idiopathic and were due to the same influences which produced acute pleurisy, for instance, such as cold, exposure, etc. When he was a student the physicians there used to begin the treatment with bleeding, and then followed this up with cathartics, as they had an idea that peritonitis commenced with some obstruction of the bowels. They first gave calomel and jalap, and if this medication failed, resorted to croton oil. The result was that the patient was agonized with pain and in a day or two died. Soon after he himself began to practice, he heard of Dr. Clark's opium treatment, and he resolved to try it at the earliest opportunity that presented itself. The first case that he met with was that of a young girl, and he gave her as much as fifty grains in one day; remaining in close attendance and watching the effects of the drug. The good result in this case induced him

to pursue the same treatment in others, and he found that he saved almost all of his peritonitis cases. He had continued this practice for the past thirty-eight years, and was firmly convinced of the superiority of the opium treatment.

The PRESIDENT, in closing the discussion, said that he did not wish to be misunderstood as regards the paper he had read. Its object was merely to give the history of the introduction of the treatment of peritonitis by opium into Bellevue Hospital; and not to advocate the claims of this plan of treatment in general.

DR. H. W. MITCHELL read a paper on

PRACTICAL RESULTS OF THE OPERATION FOR LACERATED CERVIX UTERI.

The operation of trachelorraphy, he said, aimed primarily to restore the contour of the cervix to its normal condition, and secondarily — a much more important object — to insure its future usefulness. A patient who had undergone this operation should be so far restored to her original and normal condition, as to enable her to assume future pregnancies and to pass through parturition safely, successfully, and without a repetition of the former lesion. With proper attention to details in performing the operation, and in the subsequent care of the case, healing by primary union was almost certain. In a record of two hundred cases Dr. Mitchell said that only two healed by granulation; the others all healing by primary union.

Of these two hundred cases, he had been able to follow up twenty-one cases where subsequent confinements had taken place; and of these twenty-one cases eight had had more than one subsequent confinement. These twenty-one cases had been attended personally by himself at the time of their confinement, and he proceeded to give a *résumé* of them. All were of a severe form of laceration, and in some there was laceration of the perinæum in addition. Relaceration of the cervix during subsequent confinements occurred in only two instances, and in both cases it was so very slight as not to impair the usefulness of the cervix or render a second operation necessary. In conclusion, he said that if we might judge by these twenty-one cases (which were all that he had had the opportunity to observe in which he was familiar with all the details), we could say with truth that the operation was a proper and successful one, and accomplished the following results:

(1) Diminish the pain and irritation following upon such a distressing lesion.

(2) Relieve the sense of bearing down.

(3) Cure the exhausting leucorrhœal discharge, restore the parts to their normal and healthful condition, and, above all, restore the natural functions of the cervix so that future pregnancies and labors may take place in a natural and healthy manner, and without subjecting the patient again to the train of distressing and painful symptoms calling for the operation of trachelorraphy.

DR. T. J. MCGILLICUDDY read a paper on

OBJECTIONS TO ORDINARY AXIS-TRACTION INSTRUMENTS; ALSO, THE ADVANTAGES OF THE ANTI-CRANIOTOMY FORCEPS OVER VERSION IN PELVIC DEFORMITIES.

While the correctness of the principle of axis traction, he said, was conceded by all, there were still many fallacious ideas in connection with its production. Among the most common of these were the following: (1) That it is necessary to have rods attached to the blades by a movable joint; (2) that the traction, whether with tapes or rods, must in no way be connected with the handles, which ought to move freely in all directions; and (3) that rotation and flexion of the head can take place only when Tarnier's instrument, or one similar to it, is used. These ideas, he believed, were detrimental to proper axis traction, as it was well known that in the skilful use of the forceps we should frequently unlock the blades that the head might undergo rotation and accommodate itself to the pelvic canal; and it was also a fact that Tarnier's instrument, when clasped to the infant's head, interferes with rotation.

Dr. McGillicuddy then exhibited the axis-traction forceps devised by him, which were first described in the *American Journal of Obstetrics* for December, 1889, and said that with this instrument we could make ideal axis traction during the entire passage of the fœtal head with remarkable ease and safety. With it, rotation in the posterior positions could be readily made by means of the adjunct handles, if it were thought best to use the forceps for that purpose. It was easy of application, and in its dual character it had all the advantages of axis traction and the ordinary forceps, and saved the expense of buying two instruments.

Passing on to the second part of the paper, he said that the forceps have an undoubted place as a compressor in certain cases. We were at all times to follow nature's guidance; it was well known how frequently the infant's head became elongated and otherwise distorted by pressure in its passage through the pelvis, yet without damage to the cranial contents. Therefore, as some compression of the head of the child was compatible with its safety, and as there was no modern instrument, so far as he was aware, that stood between the ordinary forceps and the cephalotrite or cranioclast, he thought there could be no doubt of the utility of the forceps which he now presented, which was intended to be used as a substitute for craniotomy or version in cases of pelvic contraction of moderate degree or where the ordinary forceps was unsuccessful. It was an efficient tractor, and at the same time it made moderate transient compression of the flexible upper portion of the infantile cranium, while it did not press too strongly on the child's neck with its tips. Thus, it gave the child a chance for its life, while it minimized the risk to the mother. It was safer for the mother than craniotomy, and it was also quicker and better than turning. He then proceeded to give in detail Simpson's arguments in favor of version in contracted pelvis, and claimed that in every particular his anti-craniotomy forceps had greater, or at least equal, advantages. This instrument, he said in conclusion, was not a cephalotrite or cranioclast, but a conservative, life-saving forceps, to be used in cases of considerable deformity. No woman should be delivered except by axis traction, and with its axis-traction handles one could determine the exact amount of resistance and the proper amount of force to use, and readily use it. With this forceps we pulled directly in the axis of the brain. The conclusion at which he said he had arrived was, that, when this instrument cannot deliver a living child, there is no alternative but Cæsarian section, as craniotomy in the living fœtus is not justifiable.

DR. R. H. SAYRE read a paper on a case of

OBSTINATE NEURALGIA FOLLOWING FRACTURE RELIEVED BY OPERATION.

The patient was a young man who, between the age of five and fifteen fractured the right femur in its upper third. After the third fracture the bones (in which there had previously been straight union) united at an angle, causing a very marked curving of the thigh and between two and three inches of shortening. From this time he suffered constantly from neuralgia of the limb, which was greatly aggravated by motion or by handling of the parts, and which gradually became so intense that he was obliged to keep himself under the influence of morphia. The pain was most severe at the point of greatest deformity, which was just in the line of the external cutaneous nerve. All remedies having failed in curing the trouble, and several surgeons having concurred in the opinion that there was a large exostosis pressing on the nerve, Dr. Sayre operated on June 10, 1888, under antiseptic precautions. He found, to his surprise, that part of the vastus externus muscle was so twisted on itself as to turn at right angles to the long axis of the femur, and that there was no exostosis present, with the exception of a most minute point, which could scarcely be considered abnormal, but which he nevertheless removed. He then passed his finger completely around the femur, stripping up the muscle for an extent of two or more inches, but failed to find any sharp projection or anything else to account for the pain. Contrary to his expectations, under those circumstances, he found that the patient was completely cured by the operation, of the neuralgia from which he had then been suffering for six years, and which had resisted all kinds of treatment. On January 29, 1891, Dr. Sayre received a letter from the patient in which he stated that he still continued entirely free from pain.

One of the points of interest in this case, to which attention was called, was the simulation of an exostosis by what was presumally a tense fibre of the fascia lata, which had became so much bound down as to press on the muscles of the thigh, and which, by girdling them, apparently caused the pain. He said he did not clearly understand how to account for the abolition of the pain. He did not consider the point of bone he removed large enough to have caused the trouble, and he did not think that when he passed his finger around the femur he tore loose any nerve fibres from the cicatrix. The explanation, he suspected, was to be found in the relief of tension given by splitting up the fascia lata, which certainly bound the muscles very tightly. The length of time that had elapsed since the operation, nearly three years, he thought was sufficient guarantee that the cure would be permanent, especially as the patient had been addicted to the opium habit; and such habitués were proverbially hard to cure of neuralgias, since the latter offered so good an excuse for returning to their old habits.

THE QUALIFICATIONS OF A PHYSICIAN IN OLDEN TIMES. — A statute of Henry VII ordains that the practice of the healing art shall be limited to those persons that be profound, sad, and discreet, grandly learned, and deeply studied in physic.

THE BOSTON

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AN ATTEMPT AT A METHODICAL TREATMENT OF GONORRHŒA IN THE MALE.

IN the *Annales des Maladies des Organes Genito Urinaires*, for June, 1891, is an article on the rational treatment of acute gonorrhœa in the male, by Dr. Paul Thièry, which has been the subject of favorable comments by Dr. E. Desnos in the last number of the *Bulletin de Thérapeutique*.

Dr. Thièry starts with the sufficiently obvious statement that all cases of blennorrhagia are not amenable to the same treatment. The treatment should vary with each period of the disease, and often with each patient.

A blennorrhagia may be said to be *regular* when it presents itself under the following circumstances: Supervening in a subject for the first time or reappearing after a first attack which has been thoroughly cured, leaving no trace; pursuing from the start an acute (not torpid) course; coming on in a person previously healthy and robust; lastly, has not yet been treated. In these conditions we can recognize five periods: a first period from the first to the third day — slight heat, appearance of a slight mucous discharge; second period from the third to the tenth or fifteenth day — heat, sharp pain, abundant discharge; third period from the fifteenth to the thirtieth day (may end in complete recovery at the end of two or three weeks), — pain abating, discharge sero-purulent, then sero-mucous; fourth period, of chronicity relatively recent — discharge sero-purulent, relapses readily happening; fifth period, blennorrhœa inveterate, discharge almost nil, dating from several years.

If each period demands special therapeutic measures, this is not the case with the general treatment, with the hygiene of the patient, which must be the same in nearly all cases, at least during the three first periods. This consists in the interdiction of all alcoholic stimulants, of all fatiguing exercises, and the sum of precautions universally known and recommended. Nevertheless, as far as coitus is concerned, Thièry formally prohibits this only during the first

periods; he is disposed to allow it as soon as the discharge has nearly ceased, with the intent of diminishing the erections and nocturnal pollutions which too prolonged continence renders frequent. This, however, he concedes with a great deal of reservation, and not without suitable advice as to protection against contagion.

During the first period, the *abortive treatment* may be attempted on the first, second or third day after the inception of the disease; this period having elapsed, the chances of success are almost nil. This is Dr. Thiery's method: The patient having urinated is placed in a recumbent posture; the ureter is washed with a boric solution and rendered insensible by cocaine. An instillator-bougie is carried down to the cul-de-sac of the bulb; several drops of a tolerably strong solution of nitrate of silver (one-fortieth to one-thirtieth) are injected; then the instrument is withdrawn, and during the act of withdrawing, the surgeon presses down the piston of the syringe so as to bathe the whole extent of the canal to the meatus. The reaction is severe, and one injection often suffices; sometimes it may be proper to make a new injection several hours afterwards with a somewhat weaker solution.

This treatment is, in fact, very painful, and the more so as the entire canal is brought under the influence of the caustic. Dr. Desnos, in his criticism, thinks it useless to apply the caustic to so large an extent of surface, and if he sees the patient at any time during the first two days, he contents himself with passing a No. 8 or No. 10 instillator-bougie to the posterior extremity of the fossa navicularis, convinced that almost never at this period has the inflammation passed this limit. He very slowly injects a small quantity of a solution of argent. nit., one to fifty, taking pains to have the liquid flow back immediately by the meatus; only twelve to fifteen cubic centimetres are thus injected; this irrigation lasts seven to eight minutes. The reaction is always intense, and it would indeed be very heroic treatment to repeat the injection at the end of several hours.

This method ordinarily succeeds when it is applied at the opportune moment. When it fails, or when the patient presents himself at the clinic after the third day, another mode of treatment must be adopted. Thiery employs one of the following methods. The first is the "classic" treatment which every one knows: at the onset, bicarbonate of soda and baths; the first period passed, opiates and balsams. The other treatment to which Thiery accords the preference has injections of iodoform for its basis. This is his formula:

℞ Iodoform, pure and in very fine powder (porphyrised), 1 part.
Oil of sweet almonds (or glycerine) . . . . 6 parts. M.

The physician cannot be expected to make the injections for his patients, but he ought to give them special instructions and show them how to make the first, for the *modus faciendi* has here a capital importance.

The injection is made immediately after micturition; the patient lying on his back injects slowly under a gradually increasing pressure eight grammes (or about two fluid drachms) of liquid till he begins to feel the need to urinate; the syringe is then withdrawn and the finger applied over the meatus, while the injection is kept up from ten to twenty minutes. The injections are continued till there is a complete cessation of the discharge; this generally comes about in a very short time.

Desnos in his Bulletin review article approves of this method of treatment, but does not think it necessary to inject quite so large a quantity of liquid, unless indeed there are precise signs to indicate that the blennorrhagia has invaded the posterior urethra. Moreever, the odor of iodoform which clings to patients who have once undergone this treatment is to many a serious objection. Iodol, which is almost inodorous, may be substituted for iodoform, but its antiseptic power is less, and the results are less satisfactory.

When the iodoform injections have failed to produce a complete arrest of the discharge, or when, for any other reason, the disease has reached the third period, Dr. Thiery suspends all local treatment as well as the employment of emollients, and prescribes only balsamics (copaiba, santal, etc.) for a time, which is always rather long.

The discharge at last disappears, or, in the immense majority of cases, becomes quite insignificant. This trifling oozing ought, none the less, to be the object of solicitious attention, for it is the signal that the disease is passing to the chronic stage; here the resort should be to the weak injections of nitrate of silver so much in favor among genito-urinary surgeons at the present day.

Lastly, these injections (or as the French writers prefer to call them, *instillations*) of nitrate of silver constitute the principal feature of the local treatment of the fifth period; the strength of the solutions varies according to circumstances. It is hardly necessary to add that during all the periods of treatment, a severe dietetic regimen should be followed; and that the same remedies should be continued for several weeks after the patient seems to be cured. Convalescences from blennorrhagia are always sufficiently tedious; this is due perhaps to the fact that the advice and prescriptions of the physician are not carried out with sufficient rigor and regularity.

CROTON WATER-SUPPLY.

The chief engineer of the Croton Aqueduct has made a report in regard to the alleged pollution of the water-supply, and its moderation and carefulness of statement ought to have a reassuring effect upon those who are apt to be affected by the periodical scare in regard to the condition of Croton water. At the same time the fact is distinctly recognized in it that the greatest danger to the quality of the supply arises from the flow into the tributary streams of liquids charged with refuse matters from the most thickly populated portions of the water-shed. At the present time, while

the condition of the water is by no means as satisfactory as it ought to be, and as, by the adoption of certain precautions, it is believed, from the natural purity of the sources, that it can be made, there is no ground for serious apprehensions in regard to the matter. The rapidly growing centres of population along the Croton water-shed, however, constitute a constantly increasing menace to the public health, and the adoption of suitable legislation to protect the purity of the sources would seem to be imperatively demanded in the near future. As to the contamination of the water in certain reservoirs to which attention has been called, the presence of a considerable amount of organic matter is held by the chief engineer, in his report, to be a phenomenon of uniform occurrence in all newly flooded reservoirs. However carefully the ground may be cleaned before flooding, there will be vegetation left whose decay will liberate sulphuretted hydrogen. Exposure to the air rids the water of the noxious gas, and the organic matter which may be held in suspension is not dangerous.

MEDICAL NOTES.

A BACTERIOLOGICAL INSTITUTE IN ST. PETERSBURG is to be established by command of the Czar, who has given a large sum for the purpose.

THE HOLIDAYS AT GERMAN UNIVERSITIES. — The new Cultus Minister, Graf von Zedlitz-Trützschler, has been directing his attention to the holidays at the high schools and universities and thinks they are unnecessarily long. He has, therefore, issued directions that for the future the summer vacation instead of lasting nominally now from August 15th to October 15th, but really extending to November 1st, shall be from August 1st to September 30th, and that the lectures shall, in all instances, commence within the first seven days of the term, and shall be continued to within seven days of it.

QUACK DOCTORS IN INDIA. — An incident characteristic of epidemics in India is mentioned by the *Indian Medical Gazette*. During a recent outbreak of cholera in Rungpur, the measures adopted by the medical authorities were already bearing fruit and the people were beginning to appreciate the value of the rules which had been issued for their guidance when a number of quacks, termed "ojhas," alarmed at the falling off in their profits, made a concerted attempt to defeat the efforts of the government. Under the pretext of exorcising the cholera demon, they levied a fee of one rupee in every household, while they personated the "demon" at night, prowling with torches on the outskirts of the villages, and terrifying the simple natives by the utterance of the most hideous yells. They succeeded, further, in spreading a report that the recent census had proved the country to be over-populated, and that the government doctors had consequently been sent down to poison a certain number of the inhabitants. The result of these rumors was so disastrous that in many districts the people deserted their villages and fled to the jungle, and the local authorities experienced the utmost difficulty in persuading them to return.

NEW ENGLAND.

MEDICAL PRACTICE IN CONNECTICUT. — It appears that energetic action is being taken in the State to obtain a satisfactory medical practice law when the legislature again meets. Many newspapers of the State have taken up the crusade in favor of a bill which has been prepared, and which is said to be favored by the different so-called "schools of medicine" in the State. Connecticut is one of the few States in which no such law has as yet been passed.

TYPHOID FEVER IN WAKEFIELD, MASS. — A large number of cases of typhoid fever have been reported in this town during the last fortnight. Most of the cases occur in the same locality, and among the employees of the Wakefield Rattan Company.

NEW YORK.

THE HEALTH OF THE CITY, as indicated by the number of deaths reported during the week ending September 5th, still continues very good. Taken altogether, the summer mortality has been very low this year, and the deaths of children under five years have been proportionally much below the average. During the week mentioned the total number of deaths reported was 736; which was 90 less than in the week preceding, and 42 less than the average of the corresponding weeks of the past five years. It represents an annual death-rate of but 22.72 to the 1,000 of the estimated population. With the exception of scarlet fever and diphtheria, the mortality from contagious diseases was very low; and the number of deaths from these two affections, namely, 9 and 22 respectively, was but slightly larger than the average for the corresponding week during the past five years. The number of deaths from phthisis, bronchitis, pneumonia and Bright's disease were all below the average.

TENEMENT-HOUSE VISITS.—The Board of Health's Summer Corps of Visiting Physicians completed its work in the tenement-house districts on September 5th. During the past two months these physicians have visited over thirty thousand houses and families, but fewer cases of sickness were found than in any preceding summer.

CENTENARIANS. — On September 5th all the shops in the village of Atlantic Highlands, N. J., were closed for a time in order to allow the population to attend the funeral of "Aunt" Mary Butcher, who died a few days before at the age of one hundred and four. It is stated that two brothers, each over ninety, and a sister, aged eighty-five, survive Mrs. Butcher. On September 9th there died in Morris County, N. J., Mrs. Mary Gallagher, who had celebrated her hundredth birthday last May; and this is the third female who has died at the age of over a hundred years within a few months in the same county.

Miscellany.

THE MEDICAL REGISTER FOR NEW ENGLAND.

The seventh edition of "The Medical Register for New England"[1] has recently appeared. No book is more often used by the busy practitioner than this very complete compilation of just that kind of information which is so often wanted, and, without the Register, so hard to obtain. No less than one hundred and seventy-seven associations, societies and clubs, national or local in New England, are described, and in most cases a list of members given. Each New England regular school of medecine or allied science is described in full. The list of hospitals and dispensaries, one hundred and fifteen in number, is especially valuable. A physician may here see at a glance exactly what kind of case is received, the rules of the institution, or obtain any other information which he would be likely to seek. Miscellaneous facts of various kinds, not coming under the titles of the preceding, also appear.

As in previous editions, the last hundred or more pages are devoted to the personal record, as far as obtainable, of all members of the State Societies of New England, giving their degrees, membership in societies, public appointments, and authorship of papers.

A large amount of work is necessarily expended in revising the Register. The medical profession is constantly changing, men, offices, societies and institutions. This edition is as accurate as can well be made for so intricate a book. It is in every way so complete, and so constantly needed by every physician, that it might well be made the official organ of the New England State Societies.

BACTERIOLOGICAL RESEARCHES UPON THE SALIVA OF CHILDREN SUFFERING FROM MEASLES.

The investigations of Mery and Pierre Boulloche[2] lead them to conclude that the pneumococcus and the streptococcus are to be found in the saliva of children suffering with measles, with greater frequency than in healthy children. Broncho-pulmonary accidents rarely appear in connection with measles except in those cases in which the streptococcus or pneumococcus is to be found in the saliva. After death one may trace the pathogenic microbe which has been found in the saliva in the upper air-passages as far as the smaller bronchi. The very frequent presence of the pathogenic agents of broncho-pneumonia in the saliva of children suffering with measles appears to explain the great number of broncho-pulmonary complications with that disease. Hence the necessity of the most vigorous antisepsis of the buccal cavity during the progress of measles.

OBITUARY. DAVID H. STORER, M.D.

David Humphreys Storer, LL.D., M.D., was born in Portland, Me., on March 26, 1804. He received his early education in his native city. Among his schoolmates was the late Prof. Henry W. Longfellow and the father of Bishop Phillips Brooks. He graduated from Bowdoin College in 1822, at the age of seventeen. He studied medicine in the office of Dr. John C. Warren of Boston, and took the degree of Doctor of Medicine at the Harvard Medicine School in 1825. Always interested in natural history, he helped found, and was an original member of the Boston Society of Natural History, and was a constant attendant of its meetings for many years, serving as its vice-president much of the time. In 1830 Dr. Storer suggested the formation of a private medical school, and within a week, in connection with Drs. Edward Reynolds, Jacob Bigelow and Oliver Wendell Holmes, he established the Tremont Street Medical School which supplied the place of a single preceptor. This was a very great advance in the history of medical education, and was the first move in the new direction of systematic teaching. After this came the summer term of the Harvard Medical School and its subsequent growth to the present time. Between 1836 and 1840 Dr. Storer proposed the foundation of a library for the Massachusetts Medical Society. On the committee with him were Drs. Jacob Bigelow and George Hayward. A member of the Massachusetts Medical Society from 1829, he always jealously guarded its interests. The soul of honor himself, he abhorred every form of quackery and deceit.

His well-known interest in natural history led to his selection by the State of Massachusetts to write a report on the fishes and reptiles of the State. He subsequently wrote a standard history of the fishes of Massachusetts and also a synopsis of the fishes of North America. Appointed as visiting physician to the Massachusetts General Hospital in 1849, he served nine years, and has ever since been one of the consulting physicians. In 1854 he was chosen Professor of the Theory and Practice of Midwifery and Medical Jurisprudence in Harvard Medical School, and most worthily filled the chair for thirteen years, when he resigned. His impressive, impassioned style of speaking drew a very large audience, and made him a justly popular and excellent teacher. For over thirty-five years he was the medical examiner in Boston of the Mutual Benefit Life Insurance Company of Newark, N. J., and till his death was its medical referee of this section. He was an original member of the Boston Society for Medical Improvement, a member of the American Academy of Arts and Sciences, of the American Philosophical Society of Philadelphia and a corresponding member of nearly every important medical society in the United States and of several in Europe, and was at one time President of the American Medical Association.

In 1876 he received the degree of LL.D. from Bowdoin College. He was operated successfully for stone in the bladder by the late Prof. Henry J. Bigelow at the age of seventy-nine. In February, 1889, he was requested by many of his old pupils and contemporaries to sit to Mr. F. P. Vinton for his portrait which should ultimately adorn the walls of the Boston Medical Library Association. He complied with their request, and the result was the attainment of a most superb picture and truthful likeness.

His professional relations with his patients were unusually pleasant. Warm-hearted, sympathetic, genial, kindly, manly, vigorous, active, he made their interests his own, and was idolized by the majority, loved by most, and respected by all. Dr. Storer was not much known of late years as a writer, though as a speaker in the frequent Society meetings he was forcible, logical and trenchant; always ready to uphold the right, but sharp against abuses of all kinds. He was ever ready to extend a helping hand to younger men, and his position of dean in the Harvard Medical School for nine years gave full scope for his kindly feelings. In the foremost rank in the specialty of midwifery and women's diseases, he was naturally selected as one of the few honorary members of the American Gynæcological Society at its foundation in the year 1876.

Dr. Storer never held any public office, his time being given strictly to his professional and kindred duties. His private life was simple and unostentatious. Married in the year 1829, he had five children, all of whom have lived to solace his declining years. His wife died in 1885. Of late years, he gradually withdrew from professional work,

[1] By Francis H. Brown, A.M., M.D. Published by Damrell & Upham, Boston.

[2] Rev. Mens. des Mal. de l' Enf., April, 1890.

maintaining, however, his sunny and bright manner as of old. His merry laugh and cordial grasp of the hand welcomed every visitor. Honest, truthful, fearless, upright, just and true, he has served as a model in many respects for younger men, and been an honor to his profession and the community in which he lived.

THERAPEUTIC NOTES.

IODINE WATER AND ARISTOL AS SURGICAL ANTISEPTICS.[1] — Popoff speaks highly of the antiseptic effects of irrigations with iodine water (1 to 10,000), and consecutive powdering with aristol (pure or in the form of a twenty per cent. mixture with boracic acid) in cases of tuberculosis of joints (fungating arthritis, etc.) and bones, callous syphilitic ulcers, simple chronic ulcers, angina Ludovici, phlegmon, furunculosis, wounds of every description, etc. The iodine lotion also gives excellent results in inveterate ozæna. In addition to its powerful antiseptic properties it has a decided astringent and hæmostatic action. Under its use luxuriant and profusely bleeding granulations rapidly assume a normal appearance, cease to bleed, etc. The iodine water likewise speedily checks parenchymatous hæmorrhage from any recent wounds.

INCOMPATIBLES OF ANTIPYRINE.[2] — According to Millard and Campbell, the following substances produce precipitates when added to aqueous solutions of antipyrine: Carbolic acid in saturated solution, tannin, mercuric chloride (soluble in an excess of water), infusion catechu, infusion cinchona-bark, infusion rose-leaves, infusion uva ursi, solution of extract cinchona-bark, tincture catechu, tincture cinchona, tincture hamamelis, tincture iodine, tincture kino, tincture rhubarb. The following substances produce coloration when added to aqueous solutions of antipyrine: Hydrocyanic acid, dilute solution, yellow; nitric acid, dilute solution, weak yellow; ammonia-alum, dilute solution, dark yellow; amyl nitrite, acid solution, green; nitrous ether, alcoholic solution, green; copper sulphate, green; ferrous sulphate, yellow-brown; ferric sulphate, blood-red; ferric chloride, blood-red; syrup iodide iron, red-brown.

Correspondence.

[From our Special Correspondent.]

SEVENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

MEETING AT LONDON.

(Continued from No. 11, page 283.)

THE LORD MAYOR'S ENTERTAINMENT. — DIPHTHERIA. — IMMUNITY. — MEAT POISONING. — THE WORKING-CURVE OF AN HOUR. — PHYSICAL EDUCATION. — WATER-SUPPLIES. — QUARANTINE. — SANITATION AFLOAT. — DINNER OF THE PUBLIC HEALTH MEDICAL SOCIETY. — USE AND ABUSE OF ALCOHOL. — INFLUENZA. — TUBERCULOSIS.

LONDON, August 21, 1891.

ON the evening of Tuesday, the Lord Mayor and Lady Mayoress of London entertained the members of the Congress at the Guildhall. All the arrangements in connection with this great reception were carried out with perfect success. Several concerts were in progress in different parts of the building during the evening, including one by Mr. Thomas, the Queen's harpist, with a corps of female players, another by Godfrey's band, etc.

On Wednesday, the time was occupied, in the Section upon Preventive Medicine, by papers and discussions upon Diphtheria. Dr. Seaton opened the discussion with a brief statement of his experience with the disease as it had occurred in different parts of London.

Dr. Schrevens, of Belgium, stated his belief that diphtheria was concurrent with typhoid fever, with reference to the time and severity of its occurrence. He advocated early notification of cases and strict isolation, for its prevention.

Dr. Hewitt, of Minnesota, gave a brief sketch of the history of diphtheria in Minnesota. He concluded that diphtheria, as it had appeared in his State, was more common among women than among men, between the ages of twenty and thirty years, accounted for by the fact that cases were mostly nursed by women. Forty-four per cent. of all cases occurred below the age of five years.

Dr. Bergeron, of Paris, followed with a paper on the "Spread of Diphtheria in Europe in the Past Fifty Years." He gave a *résumé* of the history of its progress, and advocated isolation, and the closing of schools in infected districts.

Dr. Gibert, of Havre, said that a special crusade was carried on by an organization called a *brigade de salubrité*, which insisted upon the prompt notification of cases and the disinfection of unhealthy localities. He believed it could be stamped out by strict measures.

Dr Abbott, of Massachusetts, gave a history of the disease in that State, with tables conforming to those published by Dr. Longstaff. Assuming the mortality in dense districts (those in which there was less than one acre to each person) as 1,000, the medium districts of the State (having more than one acre, but less than two acres to each person) had a mortality of 803, and the sparsely settled districts (having over two acres to each person) had a mortality of 609, these figures, being compiled from 32,517 deaths which occurred in the State from 1871 to 1888, inclusive. Many other facts relating to its prevalence in different parts of the State were presented, and the following conclusions stated:

(1) That diphtheria is an eminently contagious disease.

(2) That it is infectious, not only by direct exposure of the sick to the well, but also through indirect media, such as clothing and other articles that have come in contact with the sick.

(3) That the certainty of infection is not so great as in the case of some of the other infectious diseases, notably small-pox and scarlet fever.

(4) That overcrowding, faulty ventilation, and filthy condition of tenements favors its spread.

(5) That the influence of defective plumbing is not proven.

(6) That its transmission through public and private water-supplies is not proven.

(7) That its propagation is favored by soil-moisture, damp cellars, and general dampness of houses.

(8) That the poison may remain ineffective in houses for a long period.

(9) That density of population favors its spread.

(10) That public funerals promote its spread, but that an infected house in which a funeral is held is quite as liable to spread the disease as the body of a person who has died of diphtheria. A living, breathing person sick with diphtheria is more liable to communicate infection than the body of one who has died of diphtheria.

Dr. Charles Paget offered a paper intended to show a "difference in the susceptibility of old and new residents to diphtheria."

The discussions in the Section upon Bacteriology were devoted wholly to the subject of Immunity.

Dr. Roux read a paper describing the experimental methods of Pasteur.

[1] British Medical Journal, Sup.
[2] Medical Record, August 8th.

The principal paper of the session in this Section was that of Mr. Hankin, of Cambridge, who detailed the results of many experiments upon animals and summed up his remarks with the following proposition: "Immunity, whether natural or acquired, is due to the presence of substances which are formed by the metabolism of the animals rather than by that of the microbe, and which have the power of destroying either the microbe, against which immunity is possessed, or the products on which their pathogenic action depends."

His classification of defensive proteids was as follows:

- Defensive proteids (Hankin) Alexins (Buchner)
  - Sozins: Defensive proteids present in the normal animal.
    - Myco-sozins: Alkaline globulins from rat (Hankin), destroying anthrax bacillus.
    - Toxo-sozins: Of rabbit, destroying V. metschnikovi poison (Gamaleia).
  - Phylexins: Defensive proteids present in the animal after it has artificially been made immune.
    - Myco-phylaxins: Of rabbit, destroying pig typhoid bacillus (Emmerich).
    - Toxo-phylaxins: Of rabbit, etc., destroying diphtheria and tetanus poisons (Behring and Kitasato, antitoxin of Tizzoni and Cattani).

A very lively discussion ensued in which Drs. Emmerich, Arloing, Kitasato, Ehrlich, Klein, Fodor and Metschnikoff participated.

A great deal of interest was manifested in the paper of Dr. Edward Ballard, upon "Meat Poisoning," which was read in the Section upon Animal Diseases related to Man. Dr. Ballard's extensive experience as an officer of the Local Government Board of England enabled him to contribute a paper of unusual value. His conclusions were as follows:

(1) The phenomena which we speak of as "food poisoning," productive now of one and now of another sort of definite malady among consumers of certain foods, are claiming, on ever-growing evidence, to be regarded as true infective diseases, as much so as scarlatina or tuberculosis.

(2) In infected food capable of producing disease on being eaten we find one, or both, of two things — a living microscopic organism and an organic chemical poison of greater or less virulence.

(3) Of these two things, that which is immediately operative in the production of the morbid phenomena is the chemical poison which is apparently of a basic nature and a product of the processes of bacterial life.

(4) Specifically different bacteria capable of producing this chemical poison may, through its agency, give rise in the human system and in animals to clinical phenomena and pathological changes in the organs which are so similar that at present they cannot be distinguished.

(5) Given the bacterium and favorable environment, the bacterium may grow, multiply, and produce its own special chemical poison from the material which affords it nourishment either outside the body or within it. One important element of environment is temperature. If a bacterium will not grow at the temperature of the body, it, of course, will not produce its operative chemical poison when introduced into the system.

(6) Moreover, both the bacterium that produces the chemical poison in an infected food and the chemical poison itself may apparently be evanescent; perhaps in the former case the bacterium being killed by its own products, and perhaps in the latter case, because the chemical poison undergoes destructive changes. Hence an infected food, poisonous when eaten at one time, may fail to be poisonous when eaten at a later period, or poisonons when innoculated at one time may cease to be so later on; or one portion of an infected mass of food may be poisonous, and another part not be so.

(7) It is to be observed that in many cases of food-poisoning an incubation period has been distinctly traced, in others it has been less obvious; in some there was practically none, only from half an hour to a few hours elapsing between taking the food and the initial symptoms of the malady.

(8) As regards the kinds of animal food which in the adduced instances produced mischievous or fatal results: Of the fourteen instances food was or consisted largely of:

Pig meat of one kind or another in	9 instances
Veal	1 instance
Beef	1 instance
Butcher's meat (kind unstated)	2 instances
Tinned salmon	1 instance

I am disposed to think that this is no unfair representation of the relative frequency with which swine's flesh thus gives rise to specific diseases of the kinds referred to, as compared with animal food from other sources.

(9) The grand precaution of all is the very commonplace one signified by the word cleanliness. Every factory where pork is converted into brawn or hams ought to be so arranged that light and a draught of air can penetrate freely everywhere; there should be no corners where refuse matter can lodge and become a centre for the cultivation of morbid micro-organisms in filth; the rise of ground air should be obviated by cement under the pavement or flooring; and the place should be kept scrupulously clean and free from incursions of sewer air or putrid emanations of any kind. Kitchens, and above all pantries and places where food is stored in hotels, public refreshment rooms, or pastry-cooks' premises, and in private houses, should be similarly cared for. It should be held to be part of the business of conservators of public health to see that these rules are observed, as well as the business of every master or mistress of a family.

A paper was read by Professor Victor C. Vaughan, of the University of Michigan upon "The Infection of Meat and Milk." The subject was discussed under the following heads: —

(1) The infection may be due to a diseased condition of the animal from which these foods are obtained.

(2) The infection may be due to the innoculation of these foods with specific pathogenic micro-organisms outside the body of the animal from which they are derived.

(3) Meat and milk, especially the latter, are often infected with saprophytic toxicogenic bacteria.

In the Section on Infancy, Childhood and School-Life, a very interesting paper was presented by Dr. Leo Burgerstein entitled "The Working-Curve of an Hour." The writer presented the results of an experiment conducted in a school having two classes of girls and two classes of boys, 162 in all. Examples in simple addition and multiplication were given requiring the use of 135,010 figures. Mistakes increased as the fatigue became greater. Dr. Burgerstein concluded that, (1) it is desirable that the subject of mental over-pressure should be investigated by exact experimental methods; (2) until the question of over-pressure has been carefully investigated in a proper scientific spirit, school-lessons generally should not last longer than three-quarters of an hour.

The principal paper of the day in this Section was that of the chairman of the committee on Physical Education of the School-Board of London, George White, Esq., the subject being "Physical Education." The writer advocated the practice of having in connection with every schoolhouse, either an open air-space out-of-doors, under a large shed, or a hall in the schoolhouse, to which each class may go in turn for exercise, or as an undesirable alternative, plenty of floor-space in each class-room, unencumbered by desks, well-lighted and ventilated. He advocated the teaching of swimming in the public schools, and said that no school can be said to have its educational machinery complete which does not include ample accommodation for teaching its boys and girls how to swim. The London School Board has lately provided swimming baths for both sexes in some of its new schools.

The reading of this interesting paper was accompanied

by frequent exhibitions of exercises by a class of children, under the direction of Miss Harrison, a teacher in one of the London Schools. A discussion followed which was participated in by Lord Meath, Dr. Brown of New Zealand, Dr. Burgerstein, and Professor Robinson of Maine.

In the Section upon Engineering, M. Beechmann, C.E., of France, presented the subject of "Distinct Lines of Pipes for Water of Different Qu lities." He concluded, (1) that the ideal supply for a town consists in the uniform distribution of potable water suitable for all purposes; (2) if particular exigencies demand the expedient of a double service supplying two waters of different qualities, only one of these being potable, the double service must not be introduced into private houses, where potable water only should be at the command of the consumer.

It appears that in a few towns on this side of the Atlantic secondary supplies of water have been introduced successfully. One advantage gained being the more plentiful use of water for flushing drains, urinals, watering streets, etc.

W. Anderson, C.E., gave a description of his revolving purifier now in use at Antwerp and at Boulogne, and was followed by a paper by Baldwin Latham, C.E., upon the "Influence of Ground-water upon Health," in which he claimed that many diseases (notably small-pox) were materially affected by the level of the ground-water.

In the Section upon Naval and Military Hygiene, in the absence of Dr. Montizambert, of Quebec, his paper upon "Quarantine in Canada and the United States" was read by Dr. Collingridge. He described the administration of Quarantine at the North American sea-ports, and recommended the following requirements for a quarantine station: (1) A boarding station, so placed as to command the channel leading to the port. (2) A boarding steamer, fitted with hospital cabins for landing the sick, and with appliances for disinfecting in the offing ships' hospitals with the mercuric chloride drench, and with steam, when such disinfection is found to be all that the vessel requires. (3) A reserve steamer to replace the usual boarding steamer on emergency, and — where the station is isolated — to act as supply and mail steamer, for the forwarding of convalescents, etc. (4) An anchorage for vessels under quarantine of observation. It should be placed conveniently for the main establishment, and safely remote from the track of commerce. (5) A deep-water pier. The depth of water at low tide at its end should be at least equal to the draught of the largest vessels coming to the port, with a frontage sufficient for such vessels to moor to it if required. Upon this pier there should be constructed: (*a*) A warehouse; (*b*) elevated tanks for disinfecting solutions; (*c*) a disinfecting house containing steam disinfecting cylinders; (*d*) sulphur furnaces, engine, exhaust fans, etc., for fumigation. (6) A lazaretto or hospital for the treatment of infectious diseases. (7) Separate accommodation for non-infectious cases from infected vessels in quarantine. (8) Detention houses for the detention under observation, in groups, of "suspects" or persons who have been exposed to infection. (9) Quarters for officers and staff. (10) Telegraphic communication with the rest of the world. Telephonic communication between the different parts of the station. (11) A bacteriological laboratory. (12) A cremation furnace for the disposal of the bodies of those who have died of infectious disease.

Other papers on the same subject were read by Dr. Vignard and by Dr. J. Stopford Taylor, the Medical Officer of Health of Liverpool. The latter recommended that all medical and sanitary matters appertaining to ships should be under the control of the port sanitary authority, that medical inspectors of emigrants and emigration ships should be officers of the port sanitary authority, that the ship doctors should report to the port sanitary authority all cases of sickness occurring during the outward and homeward voyages, that the Quarantine Act be repealed, and if it be thought necessary to retain any of its powers, let them be transferred to the Local Government Board, who could then make regulations for the management of ships infected with plague or yellow fever, similar to those made for cholera.

These papers were thoroughly discussed by various health officers of English and French ports, and by Dr. Woodhull of the United States Army.

Dr. R. W. Coppinger then read a paper entitled "Sanitation Afloat," in which he treated especially of the modes of warming and ventilating modern ships. In the discussion which followed, Dr. Hyade, of the French Navy, gave due credit to the United States for being foremost in providing adequate heating apparatus in its naval vessels.

In the Section upon State Hygiene the principal topics for discussion were "State Control of Homes for the Working-Classes," "The British Law as to the Discharge of Noxious Gases from Manufacturing Processes," and "The Sale of Poisons."

In the Division of Demography the subjects of "Board and Lodging of Work-girls in London," "Migration of Labor," "Tropical Highlands for European Settlements" were presented. A remarkable paper was that of Mr. Haviland, in which the author attempted to show a relation between the prevalence of cancer and the presence of clay and lime-stone soils, in which he was not supported by the disputants who followed him.

A dinner was given on Wednesday evening by the Public Health Medical Society, to which many distinguished guests were invited, Professors Grüber, Brouardel, Pagliani, Drs. Littlejohn and Russell, of Scotland. Sir Charles Cameron, of Dublin, presided, and kept the assembly in good humor by a constant flow of ready Irish wit. Several distinguished foreign representatives were made honorary members of the Society.

On Thursday, in the Section on Preventive Medicine, much interest was manifested in the discussion upon the "Use and Abuse of Alcohol." Sir Dyce Duckworth's opening remarks were a very good plea for moderate drinking, and may be summed up in the following sentences: Total abstention is for the use of the chronic drunkard; but the sale of alcohol to children under the age of puberty should be made penal.

He was followed by Professor Westergaard, of Copenhagen, whose paper was largely devoted to the measures which had been adopted in different countries for the suppression of intemperance. He criticised the recently published statistics of Dr. Owen, and said that the average age of drunkards at death is a very imperfect measure, since it has no relation to the mean duration of life. In his criticism upon the laws of the United States, he objected to the Maine Law and the Local Option Laws, but favored the High License plan.

The remarks of Dr. Norman Kerr, President of the Society for the Study of Inebriety, were very strongly in favor of total abstinence. He presented many statistics relative to the effects of intemperance in Great Britain. With reference to improvements in the treatment of inebriety, he presented the two following propositions:

(1) By recognizing inebriety (or, as Dr. Kerr had ventured to call it, "narcomania," a mania for intoxication or torpor) as a disease, and drunkenness as very often but an effect or symptom of disease. A fair proportion of such cases, as the experience of the Dalrymple Home for the Treatment of Inebriety and other similar hospitals proved, could be cured.

(2) By amended legislation (the existing Inebriates' Acts applying only to well-off inebriates voluntarily asking to be admitted to a licensed Retreat, under the forbidding requirement of appearance before two justices) to provide for (*a*) compulsory reception and retention of inebriates too demoralized to apply of their own accord, (*b*) for reception of voluntary applicants on a simple agreement, without appearance before justices, (*c*) for the care and treatment of the poor and those of limited means.

Dr. Isambard Owen said that his paper in the *British Medical Journal* had been misquoted frequently, and that he had never arrived at the conclusion, indicated by the figures, that the total abstainer's life was a worse one than the chronic drunkard's; and Sir Vincent Kennett Barrington, in a very clear and able speech, spoke of the connection between drunkenness, lunacy and idiocy, and strongly

upheld the Norwegian restriction system, which had transformed that country from the most drunken to the most sober nation in Europe.

The afternoon was chiefly occupied by Dr. Lisley's paper upon Influenza and the discussion upon it. He inclined very strongly to the theory of personal contagion, and said that this was recognized in some Asiatic countries.

"When influenza exists in Northern China the natives will warn the stranger, and say, 'Dismount at my tent another time.' In England, parties often took place as usual, whilst the family of the host was suffering from the disorder. I wish to insist on the fact that no one suffering from the disease has a right to spread it to others, and that the hospitality of an infected house is to be avoided. Aged people, and those in delicate health, should avoid all contact with patients who have influenza, and, as a precautionary measure, letters and parcels should be disinfected."

In the Section upon Bacteriology the session was chiefly occupied with papers and discussions upon Tuberculosis, Sir Joseph Lister presiding.

Prof. Burdon Saunderson's paper treated mainly of the Etiology of Tuberculosis.[1] He regarded the question, so far as the danger from tuberculous meat is concerned, as being in an unsettled state, and that further experimental research is much needed. His conclusions were, that there are not facts enough as yet to say definitely that tubercle taken by the intestine produces general tuberculosis, but in children tubercles of the intestine are followed by tubercle of the glands and the bones, so that we may infer that the same may occur in the adult; but we are in great want of more experimental research. More evidence is wanting as to the cause of tubercle in infancy. Tubercle should be included in the Infectious Diseases Prevention Act. We still want information as to the actual prevalence of tubercle.

Professor Bang, of Copenhagen, continued with a paper in the same line of inquiry entitled, "The Alleged Danger of Consuming the Apparently Healthy Meat and Milk of Tuberculous Animals." He detailed the results of experiments with the milk of fifty-eight tuberculous cows inoculated into rabbits and guinea-pigs, and concluded that the milk of a tuberculous cow, with udders apparently healthy, is not in the majority of cases dangerous, though undoubtedly so at times. He does not think the muscular tissue of meat a favorable nidus for tubercle bacilli. Further experiments with blood of twenty tuberculous cows were detailed, with positive results in two cases only. He thought the seizure of the meat of every tuberculous animal too severe a measure. It did not appear that he had made experiments in the feeding of the milk of tuberculous animals.

Another paper upon the same line of inquiry was contributed by Professors McFadyean and Woodhead, who took stronger ground in favor of the possibility of human beings contracting tuberculosis through the ingestion of tubercular material from the lower animals. It was now agreed that, although in the later stages tubercular mammitis is readily diagnosed, there appears to be a period during which it is clinically impossible to make it out (except by inoculation of small animals); at this stage tubercle bacilli are present in the milk in very small numbers, though in sufficient numbers to render the consumption of such milk dangerous for weakly children.

Professor McFadyean also remarked that the danger of tuberculous milk was diminished by dilution with sound milk. He thought there was great necessity for a fortnightly inspection of milch cows by a veterinary surgeon. No phthisical patient should be in a dairy. The question as to the danger of eating meat from a tuberculous cow must still be answered, as many thought it to be a local disease. The main cause of tuberculosis is from animals.

Professor Ehrlich made a communication on "Koch's New Method of Treating Tuberculosis."[2]

It is generally acknowledged that the principle of cure resides in the local effects which tuberculin exercises on the specifically affected tissues. The violent inflammatory reaction passing to necrosis is neither desirable nor necessary, but, on the contrary, light and gradually repeated stimuli producing cicatrization of the tuberculous centres is what is to be desired. The essence of this method of treatment is to retain the specific excitation of the tissues as long as possible, and not to annihilate it, as with large doses is the case. The methods of Moritz, Biedert, Guttmann, Langenbrich were described by the author, all of which are based upon the application of small but repeated doses of gradually increasing strength. The advantages of these processes are that the undesirable inflammatory effects of the remedy are avoided. It is specially to be noted that the pathological signs found from tuberculin are produced by large doses.

Professor Cornil (Paris) proceeded to give his experience of tuberculin as a heroic and dangerous remedy, about which we as yet know little, and we run great danger of causing a catastrophe. He then spoke of the danger of disseminating an otherwise localized tuberculosis.

Dr. Bardach (Odessa) related his experience of its use, which was not favorable.

Dr. Hunter remarked on the great differences between Koch's experience and that of others. He described experiments to show the nature of the active principle of tuberculin. He succeeded in isolating: (1) Which gave fever and no local action. (2) Which gave local action and no fever. (3) Which gave neither, but had the remedial effect.

Professor Ehrlich, in replying, remarked that a patient can be gradually brought to bear large doses without any danger.

(To be continued.)

[1] See Journal, September 3d, p. 254.
[2] See Journal, September 3d, p. 255.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 5, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	736	369	29.26	10.22	18.90	1.40	3.92
Chicago	1,099,850	419	205	31.20	7.68	14.88	9.36	3.84
Philadelphia	1,046,964	366	164	23.22	7.02	14.58	2.16	4.59
Brooklyn	806,343	336	177	22.62	6.96	15.57	.58	3.48
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	188	73	20.20	15 37	18.02	1.76	1.59
Baltimore	434,439	183	91	26.40	7.15	14.30	3.30	3.85
Cincinnati	296,908	90	37	11.11	14.44	2.22	—	3.33
Cleveland	262,000	—	—	—	—	—	—	—
New Orleans	242,039	—	—	—	—	—	—	—
Pittsburg	240,000	107	55	40.85	4.65	17.67	6.51	9.30
Milwaukee	240,000	96	58	36 40	3.12	18.72	4.16	8.32
Washington	230,392	124	42	27.54	13.77	12.96	6.48	6.48
Nashville	76,168	14	4	42.84	7.14	28.56	7.14	—
Charleston	65,165	—	—	—	—	—	—	—
Portland	36,425	10	3	20.00	—	10.00	10.00	—
Worcester	84,655	26	19	38.50	3.85	26.95	—	—
Lowell	77,696	36	19	44.48	8.34	41.70	2.78	—
Fall River	74,398	39	26	43.52	2.56	35.84	2.56	—
Cambridge	70,028	23	10	21.75	26.10	17.40	—	—
Lynn	53,727	16	11	56.25	—	37.50	—	18.75
Lawrence	44,654	16	10	31.25	6.25	18.75	6.25	6.25
Springfield	44,179	23	5	30.45	13.05	17.40	8.70	—
New Bedford	40,733	22	14	18.20	—	13.65	4.55	—
Salem	30,801	14	6	14.28	7.14	14.28	—	—
Chelsea	27,909	—	—	—	—	—	—	—
Haverhill	27,412	9	4	22.22	11.11	22.22	—	—
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	—	—	—	—	—	—	—
Gloucester	24,651	15	10	52.22	13.33	52.22	—	—
Newton	24,379	9	5	33.33	—	22.22	11.11	—
Malden	23,031	4	1	—	—	—	—	—
Fitchburg	22,037	9	3	22.22	33.33	22.22	—	—
Waltham	18,707	6	2	16.66	16.66	16.66	—	—
Pittsfield	17,281	5	5	60.00	—	60.00	—	—
Quincy	16,723	7	3	28.56	42.84	28.56	—	—
Newburyport	15,947	8	4	50.00	—	50.00	—	—
Medford	11,079	3	1	—	—	—	—	—
Hyde Park	10,193	4	3	50.00	—	50.00	—	—
Peabody	10,158	5	3	40.00	—	40.00	—	—

Deaths reported 2,966: under five years of age 1,442; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhœal diseases, whooping-cough, erysipelas and fevers) 828, consumption 272, acute lung diseases 162, diarrhœal diseases 512, diphtheria and croup 113, typhoid fever 95, scarlet fever 35, whooping-cough 23, cerebro-spinal meningitis 18, measles 14, malarial fever 11, erysipelas 7.

From scarlet fever New York 13, Chicago and Pittsburgh 5 each, Brooklyn, Baltimore and Lynn 3 each, Philadelphia and Cincinnati 2 each, Milwaukee and Cambridge 1 each. From whooping-cough New York 4, Philadelphia and Milwaukee 3 each, Chicago, Brooklyn, Baltimore, Cincinnati and Pittsburgh 2 each, Boston, Washington and Nashville 1 each. From cerebro-spinal meningitis New York 7, Brooklyn and Lynn 3 each, Worcester 2, Philadelphia, Washington and Fall River 1 each. From measles New York 5, Chicago 3, Pittsburgh 2, Philadelphia, Brooklyn, Cincinnati and Fall River 1 each. From malarial fever New York 7, Baltimore 3, Brooklyn 1. From erysipelas Chicago 3, Brooklyn, Baltimore, Milwaukee and Worcester 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending August 29th, the death-rate was 18.1. Deaths reported 3,264: acute diseases of the respiratory organs (London) 150, diarrhœa 335, whooping-cough 85, fever 40, measles 33, scarlet fever 30, diphtheria 28, small-pox (Birmingham) 1.

The death-rates ranged from 10.0 in Halifax to 28.5 in Preston, Birmingham 18.7, Bradford 16.1, Brighton 13.1, Hull 15.6, Leeds 17.7, Leicester 20.8, Liverpool 22.9, London 17.3, Manchester 19.4, Sheffield 22.4, Sunderland 26.6.

In Edinburgh 18.5, Glasgow 18.3, Dublin 23.9.

METEOROLOGICAL RECORD,

For the week ending September 6, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: –

Date.	Barometer	Thermometer.			Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...31	30.21	58	61	55	89	100	94	N.	N.E.	10	12	O.	R.	.08
M.. 1	30.18	59	62	57	97	89	93	N.E.	N.E.	12	3	O.	O.	.16
T.. 2	30.12	64	73	56	82	85	84	W.	E.	4	2	C.	C.	
W. 3	30.16	64	80	59	73	85	79	S.W.	S.W.	3	10	C.	C.	
T.. 4	30.13	71	80	63	77	69	73	S.	S.W.	8	11	C.	C.	
F.. 5	30.25	61	65	58	68	97	82	N.E.	E.	24	13	O.	O.	.18
S.. 6	30.09	62	61	69	100	100	100	N.	N.E.	3	3	R.	C.	.12
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 5, 1891 TO SEPTEMBER 11, 1891.

Surgeon DAVID L. HUNTINGTON, Surgeon HENRY MCELDERRY, Assistant Surgeon WALTER REED, Assistant Surgeon CHARLES M. GANDY, appointed members of a board of medical officers to meet in New York City, October 1, 1891, for examination of candidates for admission into the medical corps of the Army.

Leave of absence for fifteen days is granted Captain L. W. CRAMPTON, assistant surgeon, U. S. Army.

Major SAMUEL M. HORTON, surgeon, U. S. Army, is relieved from further duty at Fort Adams, R. I., and will proceed to San Diego, Cal., and report to the commanding officer for duty at that post.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 12, 1891.

HOWARD WELLS, surgeon, ordered to special duty in fitting out the new Naval Hospital at Portsmouth, N. H.

JNO. H. HALL, surgeon, ordered before the Retiring Board, September 19th.

JNO. W. ROSS, surgeon, ordered, in connection with present duty, member of Board on Labor Employment.

APPOINTMENT.

DR. CHARLES E. WOODBURY, formerly assistant at the McLean Asylum, Somerville, has been appointed Inspector of Institutions, Massachusetts State Board of Lunacy and Charity, vice Dr. A. R. Moulton, resigned.

RECENT DEATHS.

GEORGE B. LORING, M.D., died suddenly in Salem, Mass., September 14th, aged seventy-four. Dr. Loring was born at North Andover in 1817. He graduated from Harvard College in the class of 1838 and from the Medical School in 1842. After practising in North Andover for about a year he was appointed surgeon in the United States Marine Hospital at Chelsea, where he remained about seven years, having been in 1849 appointed commissioner to revise the hospital system. He removed to Salem in 1851, where he was subsequently postmaster for four years. For many years he applied himself to practical and scientific agriculture. He was a member of the Massachusetts House of Representatives from 1866 to 1868. He became president of the New England Agricultural Society at its formation in 1864, and held the position at the time of his death. He was chairman of the State Republican committee from 1869 to 1876, and of the United States Centennial Commission from 1872 to 1876, and president of the State Senate from 1873 to 1877. He was elected to Congress in 1876, and served until 1881, when he became United States Commissioner of Agriculture, remaining in that office until 1885. In 1889 he was appointed by President Harrison as Minister to Portugal, which position he held for little more than a year.

D. HUMPHREYS STORER, M.D., M.M.S.S., died in Boston, September 10th, aged 87. An obituary notice of Dr. Storer will be found in another column.

PETER PINEO, M.D., M.M.S.S., died in West Somerville, September 10th, aged sixty-six. He was born in Nova Scotia, and at the age of seventeen began the study of medicine. After serving four years in the office of Dr. Hamilton in Boston, he went to the Harvard Medical School, but did not graduate. The next year he took a course of lectures at Bowdoin College, from which he received the degree of M.D. in 1847. From this time until 1861 he practised medicine in Barnstable, and also in Groton.

At the outbreak of the Civil War, Dr. Pineo was commissioned surgeon of the Ninth Massachusetts Regiment. In August, 1861, he received from President Lincoln the commission of brigade surgeon of United States Volunteers, and served in the Virginia field in 1861–62 on the staffs of General James S. Wadsworth and General Rufus King. During Pope's campaign he was on the staff of General McDowell and also served on General George G. Meade's staff as medical director of the First Army Corps at Antietam and South Mountain. On December 1st, while on the march to Fredericksburg, Dr. Pineo was ordered to Washington, D. C., to take charge of the Douglass General Hospital. In March, 1863, he was commissioned lieutenant-colonel and medical inspector of the United States Army. During the years of 1863–65 he personally inspected every army on the Atlantic Coast from Washington to Texas, and also the great hospitals at Fortress Monroe, Norfolk and Portsmouth, which, combined, contained nearly 10,000 beds. He was the consulting surgeon of Jefferson Davis while the latter was confined in Fortress Monroe.

In January, 1866, Dr. Pineo returned to Boston and took up his residence at Hyannis, on Cape Cod, where for many years he was in charge of the Marine-Hospital Service for the district of Barnstable, and also carried on a large surgical practice throughout that county. In 1880 he relinquished active work. The later years of his life were spent in and near Boston.

Dr. Pineo was for forty years a member of the Massachusetts Medical Society, was anniversary chairman in 1878, and for many years was a councillor.

BOOKS AND PAMPHLETS RECEIVED.

The Ship's Surgeon of To-day. By Charles Henry Leet, F.R.C.S. Liverpool. 1889.

A Course in Microscopical Technology for Colleges of Pharmacy. By H. M. Whelpley, St. Louis, Mo. Reprint.

Chorea in Relation to Climate, Especially the Climate of Colorado. By J. T. Eskridge, M.D., Denver, Col. Reprint. 1891.

Report of the Trustees of the Newport Hospital, Presented to the Corporation at its Eighteenth Annual Meeting, July 14, 1891.

Addresses, Papers and Discussions in the Section of Surgery and Anatomy at the Forty-second Annual Meeting of the American Medical Association. 1891.

Spasmodic Wry-Neck and other Spasmodic Movements of the Head, Face and Neck. By Noble Smith, F.R.C.S. Ed., Surgeon to All Saints' Children's Hospital. London: Smith, Elder & Co. 1891.

Doctor and Nurse. Remarks to the First Class of Graduates from the Training School for Nurses of the Johns Hopkins Hospital. By William Osler, M.D. Baltimore: John Murphy & Co. 1891.

Scientific Medicine in its Relation to Homœopathy. By Prof. Theodor Bakody, M.D., of the Buda-Pesth University. Translated from the German by Rudolph F. Bauer, M.D. Philadelphia: Boericke & Tafel. 1891.

Addresses.

THE HISTORY OF INSTRUMENTAL PRECISION IN MEDICINE.

The Presidential Address at the Opening of The Congress of American Physicians and Surgeons, Washington, Sept. 23, 1891.

BY S. WEIR MITCHELL, M.D., LL.D. HARV.,
Member National Academy of Sciences.

Gentlemen of the Congress of American Physicians: — The body over which I have the honor to preside meets now for the second time. Amongst organizations of medical men it stands alone as to quality and peculiarity of construction. It is made up of the special societies, which represent among us all the reasonable divisions of which medicine, in a broad sense, seems capable. Each is a group of acknowledged experts; each possesses the highest fitness. A happy thought has brought them together. The result is a meeting of men whose power to teach others is a pledge to that humility which is ever seeking to learn. It has no medical politics, nor is it embarrassed by useless idlers, who look upon such gatherings as merely pleasant social meetings. The critical demands of its component groups dictate its terms of membership. Broadly national, it meets only in the Capital of the nation, with but one object — work, and the training which insures high quality to work. It is here that the open-minded man may feel the broadening influence of intellectual contacts with those who have other limitations than his own; for, indeed there is some fear lest in our divergent devotion to special studies we run the risk that, contrary to St. Paul, the eye may say to the hand, "I have no need of thee"; or the head to the body, "I have no need of thee"; for as to us, also, there should be no schism in the body.

Specialism in medicine is of recent birth. I can remember when older physicians refused to recognize socially a man who devoted himself to the eye alone. To-day we can only look back with wonder at such narrowness.

Specialism in medicine first arose by the wholesome and gradual evolution of the individual specialist out of the general practitioner; but to-day the special physician is medically born, and is too apt to select his branch before he is weaned from the breast of his Alma Mater. You must permit me to think that all such men would be better doctors if they had back of them more years of general clinical labor. A broad-minded student of the eye once said to me (and he was old in his work): "We should all be the better for an hour or two a day in a general hospital ward," and added loyally, "the very great relative perfection of therapeutics of visual disorders is an intellectual risk." And if Cornelius Agnew could say that, we may well fancy — and you will pardon the jest which holds a truth — that a too exclusive study of the eye may result in mental egotism. If men as old as I are ready to acknowledge this danger, believe me that for the young the pursuit of but one line of practice is only too apt to result in an overestimate of their complete fitness, in hasty papers, mere case reports, wild pursuit of novelties, and the production of numberless minor text-books which can have but a selfish use. Said Romberg once to a friend of mine, who gave him a new American book, "Is the author thirty-five? I will look at it; is he forty? I will read it."

We have all come to admit gratefully the value of specialism in medicine; but he who is watchful over the general interests of his profession must have seen that these subdivisions of labor involve for us certain perils, which are seen on the one side by the general practitioner, and on the other by those who, in a large-minded way, pursue limited lines of work. Medicine does not grow in an even fashion. When watching a saline solution under the lens, you observe some brilliant crystal shoot out in advance and hold its place until the rest, more slowly but surely, join or pass it, you see an image of that which continually illustrates medical progress. To-day it is surgery which wins; a few years ago it was ophthalmology, which, in newly acquired precision, and in predictive accuracy and therapeutic gains, set up for us novel standards of exactness, and enriching our symptomatology, cast light in many directions. The mere physician seemed to be hopelessly left behind, but now again it is pure medicine which has gone to the front.

What the specialist learns, until it is commonplace, is not easily enough assimilated by the mass of practitioners. At last, however, comes a time when it is, and then the whole body of medicine feels the gain in nutrition and repays the debt. The masters of our still most perfect art, medical optics, may wisely remember that it was physicians who most distinctively recognized and diffused the knowledge that headaches and some other brain disorders are due to eye strain, and thus, while lessening our own futile labors, crowded the waiting-room of the ophthalmologist.

I could easily show you, by added proof, what we all lose by not keeping close touch of one another's gains. The criticism of the specialist is that the general practitioner does not early enough ask his help in difficult cases. The largely educated and generally occupied physician feels (and you will pardon your critic) that limitation of attention to organs, the eye, the ear, the womb, is apt to lead to a too entire trust in local means, and to neglect of those patient methods which ought more frequently to call for the added counsel of the general physician. For, now-a-days, the patient often resorts at once to the specialist, and it is the ophthalmologist who sees, or who ought to see, the first signs of specific disorder, of spinal troubles, of asthenic states. Whether justly or not, the thoughtful, general practitioner is to-day distinctively of opinion that the absence of grave mortality after operations which once were so fatal, has created a vast temptation for the younger surgeons.

This critic believes — Is he right? Is he wrong? — that too often and too promptly the gynecologist resorts to but one drug, and that steel in the trenchant form, when perhaps the state of the body makes operations doubtful as to their remote usefulness, or that he condemns to sexual neutrality some who, under patient medical treatment with careful inattention to the sexual organs, might have had preserved for them the inestimable possibilities of the wife and the mother. I once saw, almost by chance, with Marion Sims, a girl of eighteen, decreed, after purely surgical consultation, to lose her ovaries next day. I said that she ought to have a larger chance of medical treatment. Using a rather strong phrase, with energy characteristic of the man, he replied, "I never murder sex without a pang. Let us give her a re-

prieve." To-day she is a wholesome, happy wife and mother.

And, too, there is, as I have hinted, the other side of the shield — the general practitioner who sees the beginnings of disease and does not correctly interpret them, or early enough to ask counsel. He regards as rheumatic the neuralgias due to the faint beginnings of spinal disease. He treats headache or vertigo by general means, and allays them by drugs, when in an hour the physician of organs would tell him that it is feeble muscles, astigmatism, ear trouble, or nasal disease, which is the parent of the malady.

We saw in this city eighteen months ago the need for occasional conferences between physicians pursuing different branches of medicine. Upstairs, the Academy of surgery, and downstairs the Association of American Physicians, discussed at the same time the value of surgical interference in typhlitis. One body decided for, the other against, the knife, and if I may trust my memory, the surgeons were for delay.

Did I not observe signs of broadening in the views of specialists, I should have increasing fears as to the usefulness of these specializations of practice. Even as to the alienists, I see the growth of a tendency to put aside the title of "Superintendent of Asylum," and to come into relation with neurologists and with a less restricted professional life; I trust they will not pause there, for as to this I am sure that, until asylums become hospitals, and have their outside staff of attending physicians who do not live in eternal contact with the insane, we shall not develop the best possibilities for the treatment of the alien in mind. Believe me, we cannot safely permit any class of specialists to drift away from general and frequent contact with the rest of us.

As I have mentioned the need for continuous individual cultivation on a broad scale, and for personal consultation, I like to enlarge the plea and call a meeting like ours a general consultation. And this, in fact, it is: a focal point for condensed opinions, for authoritative statements, for criticism from varied standpoints, and for significant indications as to those accepted gains which ought to become, from time to time, a part of the mental equipment of all other special, and indeed of all general practitioners.

I have said that nowhere else has a plan like ours brought together such a body of experts as I see before me. And the large task which the years offer you — what is it? Not only is your organization exceptional in construction, but this Congress has national aspects. It is a collection of the ablest men in the American profession. Let us not lose sight of the fact that much of what, in older lands, is acquired knowledge, is with us to be won anew. Our climatology has yet to be medically handled in full, and as to this and the relation of the seasons to disease, we are helped by the growing usefulness of our Weather Bureau. Nowhere else is there a country in which the extent of territory covered by weather reports is such as to make its results medically available in relation to disease. Even in Europe, the influence of seasons on disease has not yet been fully studied. As an evidence of its peculiar effects here, and of the value of the Weather Service reports as an aid to their study, you will recall Wharton Sinkler's interesting proof that the paralysis of childhood (acute anterior myelitis) is a disease of the summer months. I can but allude, also, to the masterly paper of Morris Lewis on "The Relation of Acute Rheumatism to the Storm Centres," and, if you will pardon me, to my own study of the "Relation of Chorea to the Weather Curves," and of "Traumatic Neuralgia to Storms"; all of which work were impossible had we not the maps and reports of the Signal Service.

We have, as yet to investigate our countless mineral springs, many of them, as in the Yellowstone Park, unlike any elsewhere known.

The modifications which race brings into the classical types of disease, are also before us for analysis; and, as you already know, the negro is relatively less subject to malaria than the white, and also to some neuroses, as chorea, and probably locomotor ataxia; whilst, as to him and the Indian, we have still much to learn.

And if in climatic therapeutics we discovered the value of dry cold air for certain lung diseases, and have taught and made available camp life to invalids, securing for such and other noble uses parks as large as some European principalities, surely immense triumphs await us in these directions, when we have more completely studied the large alterative means afforded within twenty-five degrees of latitude, and nearly 3,000,000 square miles of varied soil, with every variety as to altitude and geological formation.

The swift social changes of this age and country await too your study in the future, with novel problems as to how the woman is being, and is about to be, influenced by a masculine education, and the acceptance on her part of male standards of work and capacity. All the vast hygienic, social and moral problems of our restless, energetic, labor-craving race are, in some degree, those of the future student of disease in America. From this bewildering spectacle of striving millions, I should like now to ask you, as scholars and physicians, to go back with me a little to more tranquil days, and, amidst the stirred dust of unused books, to catch a glimpse of some of the processes which have gone to the final making of what you so well represent — "Precision in Medicine."

It had long been in my mind to make use of the studies I have made, from time to time, in regard to the introduction into medicine of such accuracy as can only come from the use of instrumental aids. The fact that I was to have before me to-night a set of experts trained to a nicety in modern methods tempted me to think that I should here find an audience appreciative of a chapter of medical history hitherto unwritten. The work grew upon my hands, and my chief difficulty has been so to limit it in the telling as not to task your patience. An hour seems to have been set by common consent as the reasonable limit of human power to listen to one man's talk; and if you will regard this present minute as my starting-point, I shall try not to exceed it.

When I was yet a lad there were then alive men who could recall the day when what a patient said, and the physician saw and felt, were all that a case of disease had to tell him. You cannot now realize the extent of this limitation, because instruments and methods of precision have so interpreted what we merely see, feel and hear, that even though we were again forced to rely upon our unaided senses, we should stand on higher levels of knowledge than our medical fathers. The limitations they suffered under lured or drove them into attempts to classify, and minutely to multiply the signs of disease, until what

they believed they saw and felt represented impossible refinements in symptomatology, and the imagination was called in (as it has been in homœopathic provings) to assist intellect beyond the boundaries of the possible in observation.

You know, alas! that we now use as many instruments as a mechanic, and that, however much we may gain thereby, our machines are not labor-saving. They force us, by the time their uses exact, to learn to be rapid, and at the same time accurate. Thinking over the number of instruments of precision, a single case may require you to use, it is clearly to be seen that no matter how expert we may be, the diagnostic study of an obscure case must to-day exact an amount of time far beyond that which Sydenham may have found need to employ. A *post-mortem* section used to take us an hour or more, and now, alas! it goes on for weeks in some shape until the last staining is complete, the last section studied, the last analysis made.

These increasing demands upon us are due to the use of instruments of precision, or to accurately precise methods. As in factories more and more exact machines have trained to like exactness a generation of workmen, so with us, the use of instruments of precision, rendering the comparison of individual labor possible, has tended to lift the general level of acuteness of observation. The instrument trains the man; it exacts accuracy and teaches care; it creates a wholesome appetite for precision which, at last, becomes habitual. The microscope, the balance, the thermometer, the chronograph have given birth to new standards in observation, by which we live, scarce conscious of the change a generation has brought about. Certain interesting intellectual results have everywhere followed the generalization of precision by the use of instruments, like the world-wide lesson of punctuality taught by the railway and made possible by the watch. We have so often timed the pulse that most of us can guess its rate, and constant use of the thermometer enables one to trust better one's own sense of heat, as the hand appreciates it. If, indeed, you use the sphygmograph much, you get to making visual images of the pulse-curves whenever you very carefully feel a pulse. There is a crude illustration of the yearning after this sort of result in a paper on the pulse, as far back as Fouquet, in 1768. His curious diagrams of the pulse-curves, as they appeared to his mental vision, I have put on the board.

A better example of the training given by instruments is the fact that a careful study of Harrison Allen's work, with Muybridge's photographs, at last, enables the unaided eye to see in truthful order both the swift changes of convulsive acts and the normal movements of man. The subject is a tempting one and admits of much illustration.

Were I not talking to a selected group of experts, I might also dwell on the risks our instruments of precision bring to the lazy or the unthoughtful; as when one looks only at the readings of his thermometer as placed in the axilla or mouth and neglects the temperature of the extremities, or, cheated into satisfaction by the trusted certainty attained as to single symptoms, loses power or desire to reason on the grouped relation of the complex phenomena of disease. For unless men keep ahead of their instrumental aids, these, to coin a word, will merely dementalize them, and but measurably lift the mass without in proportion advantaging the masters of our art, who were so easily masters in days when the erudite touch was more uniquely advantageous than it is to-day.

Come back with me, then, you who are veterans in observation, drilled to use every engine of research, come and see the first growth of that instrumentally helped precision, which so many here have usefully advanced. The story has its romance; its broken hopes; its failures; its heroes, now lost to memory, and, too, its moral lessons. The pleasure it has given me makes me wish that our great schools possessed chairs of medical history, and that amidst our too busy life more of us could acquire some part of the interest which for me the history of my art has always had. Without the great Library of the Surgeon-General, I should have had no story to tell you; but, even good as is that noble collection, it has failed me in the last year as to some twenty books I wanted. One of them was not in any London library, and one was lost from its place in the great French Library. What I shall ask you to hear will be but a sketch, and even of this I must omit in the reading a too large part.

All the lives of Galileo were not in any American library, and it was seven years before Quaritch found for me the one book of Sanctorius I finally needed. A valuable essay could be written about this whole subject. The history of the balance in medicine is yet to be told; that of the microscope has been enough dwelt upon. We want a book about medical discovery somewhat like Whewell's "History of the Inductive Sciences."[2]

I shall confine myself almost entirely to the story of the earlier efforts to attain accuracy by instruments in the study of the pulse, respiration and temperature. It is not in the books of medical history. In but one of them is there anything interesting. It is here and there in memoirs, journals, lay-biographies, rare old folios and forgotten essays.

The latter part of the 16th and the first half of the 17th centuries was a germinal period in medicine. It saw advances in anatomy and physiology, which led up to Harvey's splendid discovery. It saw, too, the failure of his thesis to influence medical practice immediately or largely. The same period in Italy beheld the first attempts at precision as regards temperature and the study of the pulse. This was the birth era of instrumental accuracy in medicine, but many a day went by before the infant attained to useful manhood. Most strange it is that the seeds of scientific thought as to the first heat records and the pendulum were cultivated in the garden of medicine. Between 1593 and 1597, Galileo, sometime a student of medicine, invented the crude open thermometer or thermoscope.

The thermometer of Galileo was, as I have drawn it, a tube of glass, open below and ending above in a bulb. This bulb having been warmed, the open end of the tube was set in water, so that as the bulb cooled, the water rose in the tube. Then any heat applied to the bulb caused the water to descend, the reverse of that which occurs in the more modern instrument. This coarse thermoscope was obviously a barometer as well as a rude measurer of the change of temperature. A slight gain in the weight of the atmosphere might easily neutralize an increase of heat. It was not an accurate instrument, nor does Galileo seem to have rated it highly since he nowhere mentions it in his works. Others thought more of it. The approximate

[2] A strangely superficial essay, more praised than read.

date of this invention is set for us by one Padre Benedetto Castelli, in a letter about the treatment of a wounded man, written to one Cesarini, in 1638.[3] He calls to mind the fact that Galileo had thirty-five years before shown him the air thermometer.[4] A Venetian noble, Giovanni Francesco Sagredo, writes to Galileo, in 1613, that "the instrument you invented, I have bettered."[5] Sagredo divided the scale into one hundred divisions, and two years later seems to have hermetically sealed the tube, and thus given us the modern instrument. Nevertheless, says Viviani,[6] it was little employed in its improved form; and for years afterwards physicians, as we shall see, made more or less use of Galileo's rude thermometer, of the errors of which Viviani, Galileo's pupil, was well aware. But concerning this invention so carelessly made, raged a battle of words scarcely yet at an end. Renou,[7] in a very full book on thermometers, does not so much as name Galileo. Bacon,[8] Cornelius Drebbel,[9] and, as we shall see, Sanctorius have all described the crude open thermometer. Fludd,[10] in a curious, rare book (Philosophia Moysaica, Gouda, 1638), speaks of it, as was then common, as the Speculum Calendarium (Mirror of the Seasons), and says he got the figure and description from a manuscript more than fifty years old; in another of his works, however,[11] he speaks of the manuscript as being at least seventy years old; clearly no accurate deduction as to priority of discovery can be drawn from such conflicting statements. And finally, Paolo Sarpi was claimed by his biographers to have invented the thermometer. No date was set; but Foscarini, in his work on Venetian Literature,[12] observes that Fra Paolo in his notes speaks of the thermometer, and, according to his recollection, puts the year of invention at 1617.

Much of the early interest as to the thermometer was as to its medical value. I relegate to my notes, or appendix, the bulk of evidence as to prior discovery, which may not be without interest, because it is just where Wunderlich begins fully to tell the story of the modern medical use of thermometers that I shall leave off.

That so eccentric a man as Fludd should have been seriously accepted as evidence is odd enough. He had, as others had, a chance to know what went on in Padua. From the days of Elizabeth every man of fashion, and especially the English, travelled in Italy. Here, too, wandered all who studied, or were fond of science, and it was to Padua — which Sanctorius called the Garden of Science — that Bacon came, and Drebbel, and this same Fludd, and the greater Harvey. The towns of Italy were the exchanges of Europe both for commerce and for science. From them men took home what they saw or heard, describing them unquestioned (as did Bacon the air thermometer), thus leaving the future critic to settle the question of originality. The temper of the time was not that of our day. Men worked along patiently. There were no journals; the letter or the lecture were the only means of early publication. The genius who to-day invents a new forceps or a new pessary yearns for instant type, and defends his offspring with virulence. Harvey knew of his great discovery in 1616, and it got into print in 1628. His lecture notes show that long before this date he was certain of the matter and clearly knew what he had done. Whence this seeming indifference? If, after his first lectures, some obscure Italian, hearing it, had gone home and stated in a book the facts of the circulation, we should have had a controversy more absurd than those which must have made the ghost of Harvey smile, if in that other world men smile at all.

I have stepped aside to point out how it was that as to the minor, and even greater, discoveries of those days so much trouble arose, or has arisen, as to priority of claim. But it is now with the thermometer in medicine that we are concerned. Galileo, an astronomer, half a doctor of physic, made it; and a Prince, a very great person in his day, Duke Ferdinand II of Tuscany, still further improved it, and constructed divers forms for use in medicine. But this was as late as 1646.[13] In 1876, some of the Duke's pulse thermometers were shown at the South Kensington Exhibition of Instruments of Precision.[14]

In the meanwhile, a new and interesting personage appears on the stage, and with him and the later grand ducal inventions and their applications ends for many a day the practical use of the thermometer in medicine. Santorio Santorini, born in Capo d'Istria, April, 1561, was educated at Venice, and at the age of twenty-one took his degree of Doctor of Medicine at Padua. I have put in the appendix (see Appendix D) all that I have gathered as to this notable man, and regret that I have not time here to discuss his claims in full. In his commentary on Galen,[15] I find a description of the air thermometer. The drawings before you are accurate representations of the rude figures in his Commentary on Avicenna.

"We have here," he says, "an instrument with which we may closely measure the degrees of the recession of the heat of the external parts, and with which we may learn accurately, daily, how much we vary from the normal; also the degree of heat of your patients." He does not claim the invention, but says no word of Galileo.

"The patient," he adds, "grasps the bulb or breathes upon it into a hood, or takes the bulb into his mouth, so that we can thus tell," he says, "if the patient be better or worse, so as not to be led astray in *cognitione prædictione et curatione.*" He gives no tables of temperatures, no records. No real good comes of it. The enthusiasm of the inventor keeps it for a while before the public, as we have seen happen in our own day.

The thermometer lacked precision, and even when it had grown into this, want of knowledge of the cause of fevers, of their risks and how to lessen them, caused the mass of physicians to neglect an instrument which,

[3] De Nelle, Vita di Galileo, p. 69.
[4] Ibid., p. 70.
[5] Ibid., p. 71. Galileo died in 1642, having said on paper no word of his invention.
[6] Ibid., p. 90.
[7] M. E. Renou. Histoire de Thermometre, Paris, 1876.
[8] Bacon first mentions the open thermometer (as I call it) in the Novum Organum Scientiarum, 1620, and again in Historia Ventorum, and Sylvæ Sylvarum.
[9] Drebbel, born at Alkmaar in 1572, was clearly a charlatan. Of him are told, according to De Nelle (op. cit. p. 83), many wonders. In his works he describes as his own Galileo's instrument, but not clearly.
[10] Fludd was born in 1574, and died in 1637. I have described his share in the text, and for a description of his instrument see Appendix A. There are numberless diagrams of its crude form scattered through all his queer books. Renou accepts his statements, but in view of his conflicting dates and the mystical character of his writings, as well as the curious metaphysical deductions which he draws from his practical experiments, I think we should be very guarded in founding any argument upon them.
[11] Medicina Catholica, Tract. II, Sec. 1, Part 1, Lib. 1, Cap. 1.
[12] Lib. iii, page 307, note 248.
[13] See Appendix B (2).
[14] Science Conferences, Physics and Mechanics, on Instruments from Italy, p. 100, *et seq.* See Appendix B (1).
[15] Ediz Venet, 1612, p. 229. Edit. Lugdani, 1632, p. 736.

as yet, had for them little practical value. Here and there as time goes on, in the physiologies, and soon in the books of practice, we find rare statements as to the heat of man.

And now, again, we have to thank an astronomer when, in 1701, Newton marks the blood temperature at 12° of his scale, and uses linseed oil as the fluid. A little later Daniel Fahrenheit altered the scale over and over, and at last set 96° as the blood heat, and here we first come upon the use of armpit temperatures. Boerhaave[16] is said to have suggested to Fahrenheit the use of mercury in his thermometer, as to which there is some doubt; at all events, the records of the famous Paduan Academy show that long before this date the Italians made use of mercury in their thermometers.

Almost a century of silence falls upon medical thermometry. It is broken by a few allusive aphorisms of Boerhaave, and by the doubting sentences of his famous pupil, Van Swieten, in 1745.

De Haen,[17] who saw Avenbrugger working beside him clinically for years, and learned of this genius no lesson as to percussion, more clearly apprehended the value of thermal records. We have re-discovered much that is his; but his methods and instrument were clumsy, and his example proved valueless.

About 1740 appeared in England one of those notable little essays which ought to have had an immense influence. A rude breach is then made in the bulwarks of ancient belief when George Martine[18] follows Gometius Pereira in the view that heats are not specific, and in the proof that heat in man varies only in degree and not in kind. One must have read long and much, to see what a profound hold this doctrine of specific heats had on the mind of medicine. I think there are even yet lingering traces of its tenacity of influence. This book of Martine's is a wonder of able observations. He smiles at the thought of actual ebullitions or effervescences of the blood, as when Willis speaks of it as ready to burst into flame. A poet he thinks may, by his profession (that is good — the profession of a poet!) like Prior in his Alma speak of

> "Cor to burn, and Jecur to pierce,
> Whichever best supplies the verse."

There is distinct modern good sense in his sarcastic rejection of "the stomach boiling our food by its great heat."[19] Correcting all former observers, he has the temperature of the skin at 97–98°, over or under, he adds. Boerhaave, who made experiments on the effect of heat on animals, says that they die in an atmosphere at 146° owing to coagulation of the serum, for, he adds, it is disposed to clot at 100° F., and does so not much above that. Around this view was fierce battle, Hales and Arbuthnot siding with the great physiological physician. But, says Martine, "I have seen fevers, most violent, where the blood was, from observation of the skin-heat, 5° or 6° above 100°, without approaching any such danger, that is, coagulation of the serum, or fatal effects." Is it a modern professor, coolly critical, who adds, "Such heat, if neglected or wrongly managed, may indeed dissipate the more thin fields or watery parts, and so thickening the whole mass have bad enough effects that way," etc.?[20] and then he shows that a temperature of 156° is needed to clot serum.

Nor less interesting is it to find amidst notable observations of temperatures these words: "In the ague I had lately, during the height of the paroxysm, the heat of the skin was 106° and that of my blood 107° or 108°," and further, "what is very remarkable, in the beginning of the fit, when I was all shivering and under the greatest sense of cold, my skin was, however, 2° or 3° warmer than in a healthy and natural state."[21] This all looks like the beginning of practical use of the thermometer, which then was, or very soon became, accurate enough. The germ of thermometric prognostics is in some of his sentences. But again it falls into disuse, while medicine awaits more correct theories of heat. And here we leave the matter. The physiologists and chemists are busy. There is absolute genius in the researches of James Currie, as late as 1798.[22] But the year 1840 and the systematic work of Andral are reached before that change began, which in Wunderlich's classic made us familiar with the true laws of temperature in disease.

And now, I turn to a not less amazing story of the application of instrumental accuracy to the pulse. I can imagine the discomfort with which you look forward to an essay on the pulse. I can promise that it shall not be dull, and can assure you that nowhere else is it told in full.

An astronomer gave us the first rude thermometer, and it seems to have been another, Herman Kepler, who first, and certainly before 1600, counted the human pulse, or at least left a record of having done this memorable thing. The publications in which he mentions the pulse date from 1604 to 1618. Does it not seem incredible that of the numberless physicians who sat by bedsides, thoughtful, with fingers laid upon that bounding artery, none should have had the idea of counting it? I quote in English what he (Kepler) says.[23] This great but fanciful man seems to have believed the pulse to have some relation to the heavenly motions, and used the time of the pulse in connection with his arguments in favor of the Copernican system of astronomy. He says:[24] "In a healthy man, robust and full of age, in one of melancholic complexion, or in a feeble man, generally for each second there is a pulsation of the artery, with no discrimination between systole and diastole; thus there should be in one minute sixty pulsations, but this slowness is rare, commonly seventy may be counted, and in the full-blooded and in women 80, four to each three seconds. Briefly, in one hour, 4,000, more or less." The clock with which Kepler counted the pulse must

[16] "Ex votis mihi perfecit D. G. Fahrenheit," Boerhaave, Elements de Chimie, p. 94. Says Renou (op. cit.), Fahrenheit changed his scale under advice from Boerhaave to 24°. The absolute zero was set at 18°, that is, the extreme cold of the winter of 1709 in Holland. The 24° marked blood heat. Finally, he divided the degrees into fourths, whence came armpit temperature at 96° = 36·37 C. Other changes came later. It seems clear from Boerhaave's Chemistry that he did not suggest the use of mercury to Fahrenheit, for in one place I find that he speaks of this as Fahrenheit's idea, and later of having asked to have made for his own use such an instrument.

[17] De Haen, Ratio Medendi, ch. xi, pp. 7-9, 12, 17-20, 25.

[18] George Martine, M.D. Essays and Observations on the Construction and Graduation of Thermometers, and on the Heat and Coagulation of Bodies, etc. (see edition dated 1762). Wunderlich gives the date 1740 as that of the first edition; I have not seen it. The second edition is in the library of the Pennsylvania Hospital.

[19] Boerhaave. Elements of Chemistry. Translation by T. Dallame, pp. 173, 85-105.

[20] Martine, p. 146.

[21] Martine, op. cit., p. 148.

[22] Medical Reports on Effect of Water, Cold and Warm Baths, etc.

[23] Falconer mentions Kepler as counting the pulse, as also does Broadbent, but neither has any distinct references. I give all the quotations from Kepler which bear on the subject, and for these I am indebted to Professor Asaph Hall, of the National Observatory, Washington. (See Appendix C.)

[24] Kepler. Opera Omnia, p. 248 of Vol. VI, published in 1618. The quotations are from the edition of Dr. Ch. Frisch, 1858. (See Appendix C.)

have been such a "balance" clock as his master Tycho Brahe used.

The next epoch marks a pregnant hour in the history of science.

When Galileo,[25] but eighteen years of age, a student of medicine, counted the vibrations of a lamp swinging in the gloom of the Duomo of Pisa, he conceived them to be in equal time. Desiring to test the truth of his conclusion, he is said to have used his own pulse as a measure of the correctness of the pendulum. Forty years later, in describing the accuracy of his first clock-work, he says with enthusiasm, "My clock will not vary so much as the beat of a pulse." Says Viviani, his biographer, "The unerring regularity of the swing of a suspended lamp suggested to the young medical student the reversed idea of marking with his pendulum the rate and variation of the pulse. Such an instrument he constructed after a long series of experiments. Though imperfect, it was hailed with wonder and delight by the physicians of the day, and was soon taken into general use."[26] Unclaimed by Galileo, it was attributed to Paolo Sarpi,[27] and clearly enough was appropriated at a later date by that notable genius, Sanctorius,[28] who also, like Galileo, called it pulsilogon. We have no drawing of Galileo's pulsilogon, but it must have been identical with the simpler form as shown in Sanctorius. It is interesting to observe the tendency towards securing accuracy in medicine thus shown by Galileo at the outset of his medical career; Kepler's works were not published until later, and could not have been fully known to him. With his thermometer and the pulsilogon, and with this picture of his testing the accuracy of the swing of the lamp by his own pulse, this marvellous mind passes out of medical history. Where he would have left it had he remained with us, who indeed can say? Of his loss to us, a poet has spoken:

> "Ah! when in Pisa's dome
> He watched the lamp swing constant in its arc,
> He gave to man another punctual slave,
> And bade it time for us the throbbing pulse;
> Not that grave Harvey whom Fabricius taught,
> Not sad Servetus, nor that daring soul,
> Our brave Versalius, e'er had matched his power
> To read the riddles of this mortal frame.
> And then he left us. Would our strange machine
> Had kept his toil, and cheated heaven's fair stars!"

With the fame of Sanctorius as the discoverer of insensible perspiration, and with the inconceivable success of his aphorisms we have nothing to do, nor yet with his theories, or his morals, which seem not to have interfered with his appropriation of another man's inventions. His works I shall refer to more fully in my appendix.

In his Commentary on Avicenna,[29] he quotes Galen as to "the need to know the amount of departure from the natural state, which is only to be reached by conjecture." But he, Sanctorius, has long been deliberating in what manner the amount of disease could be determined, and has invented four instruments.[30] In his "Vitandum Methodus errorum omnium qui in arte Medica contingent,"[31] he has also mentioned these. Then he describes what must have been the form of Galileo's pulsilogon. The diagrams before you almost explain themselves; the full descriptive text I give in the appendix.

One represents a scale and a bullet marked with a central white line. We swing the pendulum and note the pulse with the fingers. If the pendulum be faster than the pulse, we lengthen the line; if slower, we shorten it until they coincide. "Then," he says, "we keep this degree in mind until the next day and compare it with a new record. And so we can study the pulse of health and disease." Also he defines the values and defends the accuracy of the pendulum; but of Galileo, not a word. He used the beats of his pulsilogon as a measure of the time one must breathe upon his air thermometer. Other forms are also given.[32] Thus we have to-day a pulse of so many inches (or degrees, if you please), and to-morrow it is longer or shorter, and the fever pulse is short, of course; but of results from all this we hear nothing in these huge tomes. The rest of this story is exasperating on account of its omissions. "These other instruments," he says, "record the frequency and slowness of the pulse, and also the time." "In this" he says, "are seven degrees of the difference of frequency and slowness observed by the index. Then each degree is divided into seven minutes (*minuta*), which are distinguished by the small index." "The construction of the instrument we have described," he adds, "in the book on 'New Instruments for Physicians.'"[33]

This book he refers to more than once, and in his Inaugural Lecture (a rare pamphlet)[34] promises it shortly to his students, and with it also that other, "De Jucundissimis Medicinis." As to both, one is curious, and especially as to this volume upon the most pleasant remedies. Perhaps these manuscripts are yet to be found among the treasures of some old Italian library. And if so, then only shall we know whether these Cotylæ[35] were rude watches, as seems likely. He proposes with them to measure the systole and diastole of the heart. To do this, he says, "We must measure expiration, for this we know corresponds to the systole, as does inspiration to diastole."

The explanation of the Cotyla[36] is brief, and now incomprehensible, but we learn that between expiration and inspiration "the artery pulsates twice or in many three times." Finally, we are assured that what other physicians acquire by conjecture concerning the pulse, we are able to attain unerringly by the infallible skill of the pulsilogon. What a comfort he must have found it!

And here the great Paduan professor, with his thermometer and pulse pendulum, disappears from history, dying in Venice in 1636, of a dysucturia (whatever that may be), in the parish of St. Fortun-

[25] Viviani. Vita di Galileo, prefixed to an edition of Galileo's Works, published at Florence in 1718. (See page 63.)

[26] Viviani. Vita di Galileo, etc.

[27] In the Anonymous Life of Fra Paolo Sarpi, 1750, attributed to Micanzio, and quoted by De Nelle, p. 86.

[28] De Nelle says (Vita e Commercio Litterario, etc., Losanna, 1793, p. 82) that Sanctorius probably learned of this instrument also from Galileo, who at the time of their common residence at Padua had it in mind.

[29] Sanctorii Sanctorii Iustinopolitani olim in Patavino Gymnasio, etc. Commentaria in primam fen (fen, an Arabic word for part. I chanced to find lately this word in Chaucer, Ed. 1598, p. 65, 2. He says: "But certes I suppose that Avicenne wrote never in no cannon ne in no fenne these wonder sorrows, etc." In his annotations the Elizabethan editor defines "fenne" as a partition). Primi Libri Canonis Avicennæ, Venetiis, 1625. There is no pagination. I refer to the numbered columns.

[30] Santorii Commentaria, column 21, C. C. Aremberg (Hist. de la Medicine) alone gives any competent description of these instruments.

[31] First edition, Fol. Venetz., 1620. Close to the not certain date of Galileo's invention, if De Nelle and Viviani may be trusted.

[32] Col. 76 B, and col. 219 C.

[33] Col. 76 B, and col. 219 C. Comment on Avicenna.

[34] Appendix D (1).

[35] Com. Avicen. col. 365, and as to Cotylæ, Appendix D (2).

[36] I suspect that the dial face in the last Cotyla figured may be merely intended to record the length of the pendulum. But as to this no man can speak to-day with certainty. The passage is not clear; and as concerning this latter instrument he does not say that it takes note of the time as does the one before mentioned.

tus,[37] a good saint as a stand-by for life or for death. He lies at rest in the cloisters of Santa Beata Servorum, in a mausoleum which he had made against the time of need. A strange proof of vanity is this care as to how the perishable part of man shall be housed in death. And certainly this man thought well of himself, but was also intensely loyal to our "Mistress Art," which he says, in a grandiose way, "is glorious and a helper of men both in peace and amid the din of arms. An art above all others. Folly is it to despise science in general, but to scoff at medicine is not only folly but wickedness — almost the sacrilege of bad hearts."[38] And now instrumental study of the pulse fails us for many a day. When Sanctorius died, Sydenham was a boy of nine. There is not a pulse count among all those vigorous sketches which this great Englishman drew with a master's hand, and only once does Harvey speak of their number, which he says is from 1,000 to 4,000 in the half hour.

Time presses, and I must again leave to a note[39] what lies between Sydenham and the year 1707. Here we come abruptly upon a notable book by Sir John Floyer, Knt. It is called the "Physician's Pulse Watch." He dedicates the first volume to Queen Anne, "for without health," he says, "we should have no relish even for the extraordinary blessings of your reign."

He tells us in his preface, "I have for many years tried pulses by the minute[40] in common watches and pendulum clocks, and then used the sea-minute glass," such as was employed to test the log.

At last he was more happy. One Daniel Quare, a Quaker, had, in the last years of the 17th century, put on watches what Floyer called a middle finger, as we say, a hand.

Floyer's pulse watch ran sixty seconds and, you may like to know, can be had of Mr. Samuel Watson, in Long Acre. He tests this and a half-minute watch which has a cover, by his sand-glass, and finds them not quite correct; one must add, he thinks, five beats.

And now follow pulses of age and youth, pregnancy, exercise, sleep. And we learn how diet, blisters and the weather affect the pulse. Like a good every-day practitioner, he has his fling at science in the shape of a remark on the failure of Harvey's discovery to influence medical practice. Nevertheless, the book, on the whole, is full of good observations[41] thoughtfully carried out. For the first time in medical literature we meet with tabulated results; in fact, there is a modern air about his methods. Clearly he was a shrewd practitioner, a man of scientific accuracy, and knew the world, for he predicts, alas, too truly, that this new method will be sneered at and neglected. As late as 1768, Bordeu[42] dismisses Floyer with something like contempt, and Fouquet qualifies all pulse-numeration as a mere useless curiosity, and sphygmometric instruments as idle toys. Falconer,[43] as late in the century as 1796, says, "Floyer's methods were unused until now." And this was nearly true. In the 18th century one finds now and then a pulse count, as when Morgagni describes a pulse which beat twenty-two times in the sixtieth of an hour.

If, indeed, any man wishes to nourish a taste for cynical criticism, let him study honestly the books of the 18th century on the pulse down to Heberden and Falconer, or even beyond them. It is observation gone minutely mad; a whole Lilliput of symptoms; an exasperating waste of human intelligence. I know few more dreary deserts in medical literature, from the essay on the "Chinese Art of Feeling the Pulse," with which Floyer loaded his otherwise valuable essay, to Marquet's method of learning to know the pulse by musical notes, an art in which he was not alone.[44] And error died hard. The doctrine of the specific pulses, a pulse for every malady, although rejected by De Haen, is in countless volumes, and survived up to 1827, when Rucco[45] dedicates his book on the pulse to Sir Henry Halford. Meanwhile whole volumes, like Bryce on Asthma,[46] exist without a pulse or breath count; but farther back, in a queer book on the heart by Bryan Robinson,[47] I find the first clear statement of the proportional relation of the pulse to respiration. Even those among you given to reading the authors of the end of the last and the first twenty years of the present century may be surprised to learn that statements of the numbers of pulse and respiration are very rare in Rush, Cullen and their contemporaries. Heberden[48] and Falconer, who, perhaps, set too much value on pulse counts, made no impression on their contemporaries. In Corvisart on the Heart we hear little or nothing in this direction, and in seven hundred pages of Laennec there is one pulse count and no numeration of the breathing. It seems incredible; but not until the later French school developed its force do we find in reports of cases the beginnings of those systematic numerations of the breath and pulse which are met with in modern cases.

If German science had been as much the fashion as German literature, the remarkable pulse studies of Nick,[49] 1826, would have sooner wrought a change; but it was not until a later day, and under the influence of the great Dublin school, that the familiar figure of the doctor, watch in hand, came to be commonplace.

I have thought it well to illustrate thus fully the medical history of the watch as an instrument of precision. How small, but how essential a part of pulse study are the numerations it enables us to make accurately, you all well know. We could better lose this knowledge than the rest of what the pulse teaches, and yet it is the only pulse sign we can put on paper with perfect precision, as Heberden remarked an hundred years ago.

I have kept you long, and I fear may have been wearisome, but this tale of the growth of Precision in Medicine is not without its moral. In every modern

[37] And of St. Hermagora.

[38] From "An Oration delivered by Sanctorius Sanctorius, at his Installation as Professor of the Theory of Medicine, Anno Salutis, MDCXII," appended to a lecture on the Life of Sanctorius by Capello, published in Venice in 1750.

[39] To realize how vast was the advance made by Floyer, one should read "De Variatione ac Varietate Pulsus," David Abercromby, London, 1685, and Schelhammer's "Disquisitio Epistolica de Pulsu," Helmstadt, 1690. These are among the last works of the 17th century on the pulse. The history of the pulse is very well told in the Dublin Medical Journal, vii, p. 96, by Formey, but is nowhere related with competent fulness.

[40] He wrote various other books, notably Gerocomica, 1724. In this he alludes to the pulse watch "to be made by making the middle finger of the watch large, and to run round the plate." He gives tables in this book also of his pulse and weights of urine.

[41] Save the queer chapter on the Chinese art of feeling the pulse, which seems to have taken the fancy of many able men.

[42] Ed. of 1768, p. 13.

[43] Falconer, 1796, who quotes Kepler as to pulse of man 70, woman 80.

[44] As witness Robert Fludd, who in his curious treatise on the pulse, on page 37, has a section embodying somewhat the same ideas.

[45] Rucco on the Pulse, London, 1827.

[46] Robert Bryce, London, 1807.

[47] Treatise on the Animal Economy, Dublin, 1732.

[48] Heberden. Med. Trans. Coll. Phy., London, 1768.

[49] Nick. Beobachtungen ueber die Bedingungen unter denen die Haufigkeit des pulses in gesunden Zustand verändert wird Tubingen, 1826.

century were men who sought to secure it. The true rate of advance of medicine is, however, not to be tested by the work of single men, but by the practical capacity of the mass. The truer test of national medical progress is what the country doctor is. How useful, how simple, it seemed to count the pulse and respiration, or to put a thermometer under the tongue, and yet it took in the one case a century, and in another far more, before the mass of the profession learned to profit by the wisdom of the few.

A certain sadness surrounds these stories of medical discovery. I have resisted the temptation to tell you more of Currie's notable essay, and of what little notice it won until Hufeland saw and proclaimed its value. The fate of Avenbrugger, the inventor of percussion, and of his little book, so small, so terse, so wonderful, is yet more pitiful. He foresaw its future and his own, saying in his preface (1760): "Enim vero invidiæ, livoris, odii, obtrectationis, et ipsarum calumniarum socii, nunquam defuerunt viris illis, qui scientias et artes suis inventis aut illustrarunt aut perfecerunt."

Avenbrugger lived on to see his famous colleague, De Haen, write his fifteen volumes without a word on percussion. Van Swieten did it no greater justice. In his huge history of medicine, Sprengel mildly mentions it as rather subtle. Yet were the contents of this booklet of twenty-two pages,[50] more practically valuable to man than all these men wrote or all the results of the vast and bloody campaigns during which it slept, until in 1808, one year before the grave, contented German died at eighty-seven, Corvisart translated it into French, and proclaimed its undying value to a waiting world.

And now I have done. It seems to me, as I reflect on what I have said, that I have told you a long story of neglected inventions or discoveries, ending sadly in repeated failures to make on their time any permanent impression of the real usefulness of the work accomplished. It is not only the poet who has to wait, and may never see the morning light of recognition break upon his genius.

In my mental wanderings amongst these numberless essays — these great folios — which are too often but splendid monuments, inclosing dead and forgotten thought, I have seen how strong was the resurrective force which now and then existed in some little essay long neglected, how from it, as from seed, arose in after-years a fresh growth of vitalizing thought, and how this story repeats itself over and over, until, at last, what one knew and valued becomes the riches of all.

Assuredly in our day this process is more speedy than in the distant past. But be this true or not, there must be many among you who know that apart from large human acceptance, and the material compensations of professional success, there is that in the mere pursuit of truth which mysteriously rewards from day to day. This can no public or personal lack of recognition destroy, no indifference affect. I doubt not that such consciousness of duty done must have sustained many of the men whose failures to see their work result in larger use oppresses one who reads the story of medical discovery. Over and over, they predict their own failure to influence their fellows. The poet is grieved by the indifference of his contemporaries, but the physician seems to be made philosophical by the steadying influence of every-day work, so that not Marcus Aurelius could have been more content than Avenbrugger, whilst a half century passed by half scornful, and would not see the royal gift he offered to mankind. I am glad to think he was happy, and to know that for all of us, as for him, this incessant every-day work is a talisman of success, a fact which none know better than those to whom I now say, at last, my thanks and my farewell.

[50] Avenbrugger's little book was printed at Vienna in 1761. It was first translated into French by Roziere de la Chassagne. This, and a book on lung disease by the translator, shared the fate of the original treatise. Corvisart's translation was in 1808. So long slumbered a wonderful invention.

THE PRESIDENT'S ADDRESS

AT THE OPENING OF THE SESSION OF THE ASSOCIATION OF AMERICAN PHYSICIANS, WASHINGTON, SEPTEMBER 22, 1891.

BY WILLIAM PEPPER, M.D., LL.D.

To those who share the feelings of close relationship which the earnest and friendly meetings of our Association have fostered among us, it will not seem strange that I pause, before proceeding to our scientific work, to speak of our fellow-members who have been taken from us during the past year.

Hosmer Allen Johnson, a founder, trustee, and professor of the Chicago Medical College, and one of our original members, died February 26, 1891, at the age of sixty-eight years. In the truest sense of the words, he was an ornament to our profession. Dignity and elevation of character, blended with rare charm of presence, conferred additional distinction upon his high scientific and literary attainments. His memory will be cherished not only in the city of his adoption, but by all who had the privilege of his friendship.

James Kingsley Thacher, Professor of Physiology in the Medical Department of Yale University, and an original member of our Association, died on April 20, 1891, at the age of forty-four years. Descended from a line of ancestors eminent for vigor and originality of intellect, Dr. Thacher early displayed rare powers as an investigator and thinker. It was not until the age of thirty-three, and after he had won international distinction by his researches in comparative anatomy and physiology, that he began the practice of medicine. He rapidly attained the front rank of the profession, and during the remaining years of his life his frequent contributions to medical literature were of exceptional value as embodying the work of a highly-trained scientist dealing with problems of practical medicine. It is difficult to overestimate the loss sustained in the early death of one who so well illustrated the highest type of the physician — the student of Nature as revealed in the functions and disorders of the human body.

Richard Lea MacDonnell, Professor of Clinical Medicine in McGill University, had been a member of our Association but a short time when his death occurred on July 31, 1891, at the sadly early age of thirty-five years. He possessed gifts and ability of high order as clinician, as writer, and as teacher. He had already accomplished much valuable work, and was so well equipped in purpose, powers, and position that a brilliant career was confidently expected. The Association has lost in him one of its most promising members.

Out of our short list of honorary members, Fordyce Barker and Joseph Leidy have gone. Dr. Barker died May 30, 1891, at the age of seventy-three. His long life seemed all too short for the countless acts of courtesy and charity which he found place for in a career rich in professional and social success. The delightful charm of the man almost threw into shade the remarkable gifts of the physician. His tact and urbanity were perfect, and his hospitality boundless, so that he was the paragon of hosts. The affectionate solicitude with which he lavished on his patients, rich and poor alike, the resources of his skill, made him one of the most successful and beloved of physicians. His large-hearted sympathy and benevolence made him eager in the organization and service of all movements for the relief of suffering and the elevation of his fellows. The rich treasures of his experience and his strict scientific integrity made his publications valued in all parts of the world. These many honorable distinctions made it eminently proper he should be placed on the list of our honorary members, and in his death we all have to lament the loss of a dear friend and a cherished colleague.

In the death of Joseph Leidy, which occurred on April 30, 1891, at the age of sixty-eight years, the medical profession in America lost its most-loved and honored member, and American science its most illustrious representative. It makes a difference to the world when such a man passes away. At his birth, Nature gave him her *accolade*, and all his life long he was loyal to the holy quest of truth, which is the vow imposed on those whom she invests as her chosen knights. Who can say how much of the marvellous and inexhaustible knowledge of Nature this great man possessed came from the singleness of his life and the purity of his heart? Who can say how many of the miserable shortcomings we all exhibit, even in our best work, spring from the selfishness and the prejudice we allow to mix with it? Leidy never had a theory to support or a purpose to serve. The all-sufficing motive of his life was to learn the truth of Nature, and to help others to learn it also. To the last, he kept the humility and the simplicity of a little child. No delight could surpass what he felt when new facts were disclosed to him, unless it were that with which he would share with others all he knew. He made great discoveries in various fields of scientific research; but he never seemed to feel any credit was due to him. It merely was that he had chanced first to see that particular fact. It was no achievement of his. Nature had but given him one more little glimpse of her truth. He looked at all natural things with the same fresh, clear-eyed directness. It did not matter by whom, or under what names, or in what surroundings, an object was brought before him; he simply saw the thing itself. In this way he detected blunders innumerable, and became a general referee to whom all sorts of supposed remarkable discoveries were submitted. The certainty with which he could detect the real nature of the object, and the simple, genial way in which he would explain it made irritation impossible. All knew he would treat an inaccurate observation of his own in the same kindly but unsparing fashion.

If only the facts were discovered, it mattered not to him by whom the discovery was made; and windy battles over claims of priority or selfish struggles to pre-empt fields of investigation were alike impossible to him. More than once he turned aside from lines of research in which he was the pioneer, and where brilliant discoveries were in sight, as soon as he found there were others who longed to win distinction in the same field. I could never see that he enjoyed their triumphs any less than if he himself had won them.

Incapable himself of jealousy or untruth or disloyalty he seemed also incapable of thinking evil of others. In all matters of business he would have been readily imposed upon, and his confidence was freely bestowed on all who sought it. But in the estimation of the scientific value of a man's work he was in many lines of research the very highest and the most candid authority.

Of course he had no enemies. All were united in respect and affection for him. But only those who lived in close and frequent intercourse with him can tell what elevating and humanizing influences this man of science diffused around him. It helped you to be truthful, simple, and liberal merely to meet him and talk with him. I think few men have been more loved by men than he was; and I know not if there be a higher tribute than these to a man's nature. I shall not attempt to tell what Leidy achieved in many branches of science. The mere fact that his scientific contributions numbered fully eight hundred, conveys little idea of the range of subjects they covered; the epoch-making character many of them possessed; or the enormous amount of patient labor bestowed on the thousands of exquisite illustrations they contained. I cannot tell you what he was to his colleagues or to his students in the University of Pennsylvania, where for thirty-eight years he filled the Chair of Anatomy. I feel sure that every colleague in the faculty and every student in the college during that long time was influenced for good by contact with this pure and lovable man. For to Leidy the ever-growing fulness of knowledge brought increasing humility and wonder at the boundless mystery of Nature. And as the close of a profound study of one after another field of natural history, added to his sense of the inadequacy of our powers to cope with the problems of creation and life, his feeling of the necessity of a God of Nature strengthened and deepened. Only a few days before his death, as I stood by his bedside, he chanced to notice the flowered pattern of the carpet on the chamber-floor, and said, "How can they work flowers in a carpet! We love flowers! No one would tread on flowers!" And with his heart full of such gentle thoughts he lapsed into peaceful unconsciousness — like a tired child falling asleep in the bosom of the Nature he had loved so long and so well.

It would seem to me an abuse of a rare privilege were I to add to what I have said more than a few but cordial words of welcome. In thanking my colleagues, the members of the Association of American Physicians, for the honor conferred upon me when called to preside over this meeting, I may couple with these thanks a no less hearty congratulation that the recurrence of our Congress year finds our Association not only instinct with life, and in close touch with what is best and most progressive in medical work, but establishes the fact that participation in the Congress certainly does not detract from the interest and importance of our own meeting.

No less may I join with our warm and brotherly greeting to the distinguished guests who have accepted

our invitation and honor us with their presence, the gratifying claim that the many charms of a visit to this country, and the great pleasure to be given and received in the kindly social intercourse of this week, have not been more potent attractions than the prospect of sharing in the rich programme of scientific work arranged for this Association and for the Congress.

So far at least as medical men are concerned, one need no longer repeat the assurance that when they cross the ocean they change not their feelings but only their horizon. There exists no barrier to our intercourse. The complete solidarity of our science o'ertops all divisions of race or place. The progress and the interpenetration of knowledge first outgrew personal authority, and have now outgrown the limits of national schools of science.

The existence of this society of clinicians and pathologists is by no means a protest against specialism in medical science. Its presence here in this Congress is typical of the present attitude of scientific medicine to specialism. Just as this great meeting would be crippled without the participation of many special societies, so would our own membership be sadly incomplete did it not include many eminent specialists. General medicine and general surgery to-day are federations of specialists, and the general clinician, even of the broadest guage, in dealing with obscure and complicated cases, acts but as the leading partner in a medical firm.

This is the natural and desirable development of our professional relations. The courts where the issues of our causes are decided, are open constantly, and have unlimited jurisdiction. The microscope, the ophthalmoscope, the tæmatometer, the tests of organic chemistry, are witnesses whose presence is always available, and whose testimony as to matters of fact is unimpeachable. No cumbrous accumulation of papers, and elaborate machinery of procedure hamper our legislation. In the privacy of two or three consulting-rooms are determined with all reasonable certainty and celerity, the issue of causes, vastly more vital to the parties interested, and scarcely less so to the community at large, than those which fill columns in the daily press and block the slow wheels of litigation for years. Remedial measures are agreed upon and carried into effect which require such masterful decision, fertility of resource, and energy of action, as stamp the great leaders in all the hard fought battles of the world.

It is a supreme glory of our service that it is restricted to no nation, no dynasty, no place, no class. The monarch of the mightiest empire and the poorest patient in the hospital ward, command and receive the same efforts in their behalf.

It is by the combination of the highest specialism, wrought by mutual trust and trained co-operation into absolute unity, that the great triumphs of medicine and surgery are now achieved. The evident truth of this is the basis of the work of our Association. The broadening field, the increasing precision of our work; the vast scope of the questions of heredity, of climatic and racial influence, of hygiene and dietetics, of mental and moral regimen — of all that is included in preventive medicine, the great battlefield of the future, and which must be used as far as understood in the struggles of the remedial medicine of to-day, call for a co-operation — not local, but national and international — which shall bring into closer touch, better mutual knowledge and deeper mutual trust all earnest workers in scientific medicine.

It is then with the happy assurance that our work here is in line with the great onward movement of the day, that I announce the opening of the Sixth Annual Session of the Association of American Physicians.

ORTHOPEDIC SURGERY AS A SPECIALTY.

THE PRESIDENT'S ADDRESS BEFORE THE AMERICAN ORTHOPEDIC ASSOCIATION, WASHINGTON, SEPTEMBER 22, 1891.

BY A. B. JUDSON, M.D., OF NEW YORK.

A FLOURISHING medical society sometimes divides into sections. It is an involuntary process, or at least, one to which the members are forced by the necessity of thoroughly accomplishing the objects of the society. The process may be called an analysis. In the present instance, however, if I understand the organization of the Congress of American Physicians and Surgeons, we have a synthesis. A number of societies voluntarily combine to secure ends which were not comtemplated at the beginning of each. A division of labor having been made, according to which each society has its special work to do, it is proper and useful for the societies to meet together for co-operation. Let us therefore briefly consider some of the salient features which mark our specialty of orthopedic surgery. A better knowledge of ourselves will put us in more quick relation with other workers, both general and special, and enable us better to do our humble part in the grand plan.

In common with other specialists, we occasionally hear that we are limited in the possible range of our achievements. The limitation is, however, entirely voluntary, and the work within these limits is practically inexhaustible. If we were not so busy, we might perchance be troubled because we are not always and exactly understood. The sign before an orthopedic hospital in New York is supposed by some of the passers-by to indicate a homœopathic institution. I am probably not alone in having been asked to perform the minor surgical operations of the chiropodist. Many, even among the learned, suppose that the latter part of our name is derived from the Latin word for *foot*, instead of from the Greek for *child*. We are also confounded in the minds of some with the instrument-makers. I mention these things in passing, without a serious thought. If they exist, like morning mist, they will pass away.

It is well, however, to recognize the fact that our practice is comparatively lacking in popular qualities. We have no critical, capital, or brilliant operations. What of brilliancy is there in keeping a limb in such an attitude that the weight of the body in locomotion shall be a favorable, instead of an unfavorable agent, until the natural growth of the member results in comparative symmetry; or in controlling the environment of the diseased joint and the patient, so that the natural processes of recovery and repair shall have their triumph, while the limb is daily growing in symmetry and ability with the growing child? This is not bold surgery, but there is great pleasure in watching and reverently assisting these constantly recurring natural miracles. And will any of us forgot the delightful

friendships made among our little patients, their pretty bashfulness, their ready confidence, their irrepressible cheerfulness, their graceful acceptance of what is, alas, inevitable? The combination in them of childish and heroic qualities is a daily wonder. To watch them at play is like a dream in which the birds and wild flowers are enacting a tragedy and improving the precepts of Stoic Philosophy.

Our practice is not only lacking in brilliant achievements, but it is also uninviting, because, as a rule, our patients do not make absolute recoveries. There is always, or nearly always, a residuum of disability and deformity, and in this is to be found perhaps one reason why our specialty has existence; for, what general practitioner would lightly assume the care of a case so exceptional in his practice, and so momentous as those which fall into our specialty?

The why and the wherefore of specialties, in general, and ours, in particular, are questions of interest. Some will say that we have a natural aptitude for mechanics, an inherited preference for slow and sure methods, compared with those that are quick and uncertain, or an inborn reverence for what is physically demonstrable. These personal characteristics may explain why some of us are orthopedists, but I believe the reason why our specialty exists and thrives, is to be found in the desire of the public, the final arbiter, that experts should be invited to bear the responsibility of orthopedic cases.

One very attractive feature of orthopedic practice, is its *reality* — for want of a better word. It is especially the domain of physical demonstration, where the acceptance of pathological doctrine, as well as therapeutic precept, must be preceded by absolute proof. Here, subjective symptoms are forgotten in the presence of objective signs. The data for diagnosis are visible, palpable, and mensurable. Treatment is by forces whose action is nicely directed, increased, diminished, and accurately measured. The very weight of the body is duly considered in trauma and therapeutics, and finally the results of treatment are recorded in degrees of a circle and fractions of an inch. Dealing thus, as we do, with physical realities, it is well for us to keep our eyes open to the moral verities also, which no less form part of the tissue of our daily professional work. Let us remember that diligence is the price of success, and that the only desirable success is that which is reached by the rejection of error and the loyal recognition of truth.

Since our last meeting, there has occurred the death of one of our corresponding members, whose hostility to error might in all friendly criticism, be called intemperate, one whose diligence and devotion to the interests of his patients make him an exemplar worthy of our affectionate remembrance. But I will not trespass on the subject of the first paper of our session, which is by Dr. A. J. Steele, of St. Louis, on the orthopedic work of the late Mr. Thomas, of Liverpool.

Mrs. Green (to young physician, whom she has called in haste) — "Oh, doctor, doctor! I fear you have made a terrible mistake! My daughter had that prescription which you sent her last night filled, and took a dose of the medicine. Now she exhibits every symptom of poisoning. Oh" —

Young Physician. —"Prescription, madam? Why, that was an offer of marriage!" — *Puck.*

Original Articles.

MODERATELY CONTRACTED PELVES.[1]

BY RAY W. GREENE, M.D., OF WORCESTER.

I BRING to your attention to-day the subject of moderately contracted pelves, in the hope that many of you will think it profitable to discuss some of the phases of this vital question. Since the department of obstetrics makes up so large a share of the work of the general practitioner, this subject deserves, it seems to me, more universal attention. Springing from this subject are questions which on the one hand affect beyond calculation the most sacred interests of the family, for the life of a mother and her child is in peril; on the other hand, the physician is confronted with complex problems, which, for their solution, appeal to the resources at his command in the art and science of midwifery, and to the sanctions of conscience as well. Indeed, no greater responsibility can come to any of us than when obliged to decide upon some action which means the sacrifice of human life though yet unborn; or when our decision by inaction may entail a more terrible calamity, because possibly a needless one, the sacrifice of the mother as well. Furthermore, are we justified in violating the course of nature by procuring a premature birth, with the hope of doing little or no injury to either and saving the life of both?

In treating these questions, let no one infer that I seek to bring into controversy the religious aspect of the case, while I keep in mind the highest duty of our profession, namely, to save life, and that the life of the mother is paramount to the life of the child. The limitation which I have put upon my subject, moderately contracted pelves, precludes those cases which we can easily decide must terminate fatally but for the prompt execution of some one of the major operations, like craniotomy or Cæsarian section. Nevertheless, the pelvis of moderate contraction is not without its dangers to both mother and child, and the treatment of such cases demands closer study and more deliberate judgment than those of a more pronounced type. And here it is that the appropriate treatment brings the highest rewards.

The three cases which led me to look up this subject came under my observation within a six months, and are as follows:

Mrs. M. came under my care at the completed term of the first pregnancy. I was summoned early of the morning of February 24, 1891. She is of American birth, average height, twenty-seven years of age; been married eighteen months. Since eight years of age, she has been more or less delicate, owing to slight injury to spine at that time, "which some years later developed caries of the lumbar vertebræ, leaving a depression in that region which disappeared under treatment of many months in a New York hospital." There followed a slight impairment of locomotion, and after a fall some three years ago from a hammock, striking on one hip and side, she has not been able to stand on her feet without help, more from fear, as she expresses it, than from any other cause. The general health has been very good of late, especially during the pregnancy. On inspection, there appeared no deformity of the spine. The pelvis was symmetrical,

[1] Read before the Massachusetts Medical Society June 9, 1891, and recommended for publication by the Society.

the hips on the same level. The thigh and leg muscles were much atrophied.

The pelvic measurements were, namely, anterior superior iliac spines, 8¼ in.; crests, 9½ in.; exter. conj., 7¼ in.; inter. conjugate, 3⅝ in. There seemed to be a greater inclination of the pelvis than usual, and the promontory of the sacrum was exceedingly prominent. The labor, which had begun at 1 A. M., February 24, and the membranes rupturing an hour later, progressed very slowly. The head was located at the fundus on right side, with back toward left. The fœtal heart heard very distinctly on all sides of the umbilicus. By vaginal examination at 10 A. M., found a foot presenting, the os admitting one finger, with the cervix but little taken up.

During the evening of same day, the patient was seen by Dr. L. Wheeler, at which time the os was dilated to size of silver dollar, cervix taken up. The pains were only of moderate intensity and came at long intervals. He agreed with me as to the grave prognosis for the child. We decided that there was no indication for interference with the labor. On my first visit of the second day, 7 A. M., I found the patient had rested some, with the aid of a small dose of chloral and opium. The os was now fully dilated. During the forenoon the pains did not improve much in power or frequency, so that the patient was somewhat fatigued and more nervous. After thirty-six hours of labor, ether was given and the body was easily extracted, but the head was firmly held at the superior strait. In this work I was ably assisted by Dr. G. O. Ward, and it was with the greatest difficulty that our combined efforts succeeded in getting the head through. Attempts were made to get the extended arms down, but only succeeded in getting one out before the head. The fœtal heart, which was strong and regular before the operation, beat faintly for one-half hour after birth; but all efforts (lasting nearly an hour) to resuscitate the child proved unavailing. The child, a male, weighed 6¾ lbs. The bones of the skull were firm; the bi-parietal diameter measured 3⅝ in. The third stage of labor was normal. The patient recovered from ether well; the pulse was of fair strength, about 130. One hour later, the patient suddenly went into a collapse. The pulse was scarcely felt at the wrists at times, during the next two hours. The usual treatment for shock was inaugurated. For two days, the mother's condition was most critical; gradually improvement set in, and convalescence, though slow, was marked by nothing of special interest.

The second case is that of Mrs. A., American, of more than average size, twenty-seven years old; married a few years. Always had good health. In October, 1886, her first pregnancy was terminated by a difficult labor, lasting several days; delivery finally accomplished after craniotomy. In May, 1890, the patient, being about two months pregnant, placed herself under the care of Dr. Leonard Wheeler, who asked me to see the case and make pelvic measurements. Taking the measurements independently of each other, our figures very nearly coincided, so that the average were as follows: —

Anter. sup. spines, 9¾ in. Crests, 10 in. Exter. conj., 7½ in. We were quite surprised in not being able to reach the promontory per vaginam, from the fact that the walls of this passage were marked with cicatricial tissue, which seemed to shorten the vagina, and we could in no way push the vault up quite to the extent of a finger's length. By estimation we placed the inter. conjugate diameter at 3½ to 3¾ in. The outlet of the pelvis seemed ample. As the family were exceedingly anxious to have a living child, I agreed with Dr. Wheeler that premature labor at the eighth month offered the best chances to secure this end.

Under most thorough antiseptic precaution, in the thirty-sixth week, Dr. Wheeler inserted a bougie into the uterus. Two days later, no pains appearing, Barnes's dilating bags were used effectively, and an easy labor of a few hours gave a living child, born in the O. L. A. position; weight, 6¾ lbs. It required but little manipulation to get the child started in life, and its later development has been most satisfactory. It now weighs 19 lbs., being seven months old. The convalescence of the mother was perfectly normal.

The third case. Mrs. M., American, age thirty-one, married, average height, quite corpulent. From an obsterical point of view, she has an eventful history. From August, 1881, to January, 1890, she was eight times pregnant, with following results: three miscarriages in the third or fourth months, with adherent placentæ; one breech, which died in utero near full term and retained two weeks after its death; one footling, which died in being born; three vertex presentations, two of which were delivered alive with forceps and now living; one died in birth (forceps delivery). I saw her in the maternity-ward of the Worcester City Hospital, in Dr. Wheeler's service. The pelvic measurements were taken by Dr. Wheeler, Dr. Ward and myself. While not exactly the same, the average might be as follows: at the ant. sp. spines, 11 in.; crests, 11½ in.; exter. conj., 7¾ in.; inter. conjugate, 3⅝ in. March 15, 1891, supposed to be the thirty-sixth week, at noon, the bougie was placed in the uterus and held by cotton tampons in vagina. Labor began little after midnight, and in 3½ hours child was easily born in good condition. Girl, weighing 5 9/16 lbs.; length, 18 in. Mother had normal convalescence.

Cases like these well illustrate what I mean by the term moderately contracted pelves. If asked to put it in figures, I should say that pelves of the flat variety and justo-minor type, whose internal conjugate diameter measures not less than 3 in. and 3½ in. respectively, would come under this head.

Dr. Edward Reynolds has given the best and latest statistics on this subject, which are found in the last number of *Gynecological Transactions*, under the title of "The Frequency of Contracted Pelvis among American Women."

While this abnormality is comparatively rare in this country, it is very difficult to state the exact frequency, from the fact that so little attention has been paid to the subject. It seems more than likely that more cases would be found if we were looking for them. How frequently it is that the diagnosis of contracted pelvis is simply a guess, from the fact that the labor was tedious.

Too often, after hours of futile effort, the weary doctor is satisfied with the diagnosis volunteered by some old-time nurse; namely, "That patient is too close built, sure." No measurements are taken; in fact, he knows as little about pelvimetry as the latest methods of cerebral localization. It is also overlooked that many abnormal positions are due to the contractions of the pelvis, and the doctor is satisfied to have

made out the position, he attributes to it all the evils which follow, without thinking to discover the cause (if any exist) of the malposition.

A dwarf, a humpback, or the ankylosed hip would suggest to the dullest or least experienced observer the more than possibility of an abnormal pelvis. But it is also in large and otherwise well-developed women, as in the two cases cited, that slight contractions are found. These cases also well illustrate the way in which most frequently the attention is first called to the pelvis, that is, by one or more difficult labors. Such a history being furnished, the physician would indeed be negligent should he not ascertain the exact condition by measurements, which alone give positive proofs of deformity. Such measurements, to be of value, must be most carefully taken, more than once, with a mind unprejudiced by the history of the case or the theory of any other observer. The measurements of most practical value I have mentioned in the histories of the cases cited.

The text-books very rightly devote considerable space to pelvimetry. The directions should be well studied and frequently practised to insure accuracy. In some cases, there is abundant room for error. In taking the external conjugate, it is with difficulty that you can be sure of your posterior landmark, especially in patients at all corpulent. This measurement should never be substituted for the internal measurement, by which the true conjugate is estimated. To be sure, there are cases where the promontory of the sacrum cannot be reached, especially in the later part of pregnancy and during labor, when the presenting part interferes; but more often the cause of failure is due to the fact that too many have never been taught or never acquired the art of thorough pelvic exploration.

In addition to actual measurements, it is important for the physician to be able to estimate any deviation from the normal in the pelvic outlet, the inclination of the pelvis, the depth and inclination of the symphisis pubis.

Having secured all the facts in the patient's history, and with a definite idea of the impediments to normal labor, the physician's judgment and skill are now severely taxed in devising his course of action. Here no absolute rules can be laid down. Any procedure must be influenced by the many questions which arise, like the following: the condition of the mother and child, the presentation, the size of the child, is the patient primipara or multipara, whether seen at full term or before.

To consider the treatment in all its detail would greatly exceed the limits of this short paper; therefore, I will make my discussion of the treatment centre about the cases given.

Here, in the first place, we have a primipara at full term when first seen, membranes ruptured, os but little dilated, pains weak and at long intervals. Measurements confirm our suspicion of contracted pelvis. The internal conjugate $3\frac{1}{4}$ to $3\frac{1}{2}$ in. The presentation is a foot. Here there can be but little difference of opinion as to treatment. The child is evidently vigorous, and the condition of the mother demands no immediate interference.

Our duty, then, is to make every provision possible for the maintenance of the good condition of the mother, for the labor is likely to be a long one, and it is desirable at least that the cervix become well dilated before any untoward event compel us to assist in the delivery. Inasmuch as the mortality of this presentation in a normal pelvis is by no means inconsiderable, only a guarded prognosis for the child could be given to the family. We were conservative enough to wait several hours after the os was fully dilated (the mother and child being in good condition) in the hope of getting stronger pains.

In interfering after thirty-six hours of labor, we expected by effecting a speedy delivery to relieve the mother and save the child. In this we were disappointed. Had we been able to get out quickly the extended arms, I think we might have saved the child, where the internal conjugate was but a trifle less than the bi-parietal diameter of the child's head.

Take this case again; with the exception that the head presents instead of a foot, would we have been more likely to have saved the child? To be sure, in slight pelvic contractions there are cases where spontaneous delivery has taken place, the child being born alive. But in this case the contraction is more than a slight one. The all-important factor in spontaneous delivery is wanting, namely, strong pains. Besides, the greater than normal inclination of the pelvis would, it seems to me, be unfavorable to a speedy engagement at the brim, even though the pains be tolerably strong. It might be said that had the vertex presented, we would have had better pains; but that is unlikely, from the temperament of the patient, which is more nervous than muscular. And had powerful pains been present, it is more than likely that the patient's strength would have been exhausted long before the head could be moulded through the superior strait. In hoping for a natural delivery, we are not justified in allowing the labor to be long continued, without progress, at the expense of the vital forces of the mother. Take it for granted that the child is alive, what assistance should be rendered? Shall it be forceps or version or perforation?

Just as natural labors sometimes occur in contracted pelves under favorable conditions, so likewise the forceps, while theoretically contraindicted, may be of service in supplementing the natural forces. The objections to forceps are that they tend to increase the diameter of the fœtal head, which is already too large for the pelvic conjugate, and otherwise disturbs the normal mechanism so that an unsafe amount of traction force is made necessary. The chief objection to the use of the forceps in these cases is the immense amount of harm they are capable of inflicting upon the mother. I will admit that the unskilful operator is many times the cause of these injuries, rather than the instrument. As illustrating the unsatisfactory results of high forceps, I find in Lusk Dr. Harold Williams's figures quoted. He collected 119 cases of forceps applied above the brim. Of the mothers, nearly 40%, of the children, nearly 60%, perished. Of course, these figures are, in a *measure* only, applicable to pelves of moderate contraction. "The forceps," says Lusk, "as a means of delivery before fixation of the head, should be discarded, not because it cannot be employed with success, but because its use, even in the most skilful hands, is extra-hazardous."

The forceps being ruled out, the next consideration should be version. Between these two operations, the controversy has been long and bitterly partizan. The French, in years gone by, have given no alternative for forceps, except craniotomy. But the opera-

tion brought into fashion in Great Britain by Sir James Simpson has been quite generally accepted in this country, as an elective operation in deformed pelves. The value of turning is well stated by Barnes, in his lectures on obstetric operations, from which I quote: "The value of turning in moderate degrees of pelvic contraction rests greatly upon the truth of the following proposition: The head will come through the pelvis more easily if drawn through base first than if by crown first." Other great authorities have affirmed this proposition, while others have disputed it. Dr. Barnes says: "I venture to submit that I have made such clinical observations as are equivalent to direct experiments." He cites cases where, having failed in the use of forceps, he does version and delivers the aftercoming head *easily*.

The proposition is proved by these two circumstances: first, the bones of the fœtal head overlap more readily at the sutures, when the base entered first; and, second, the head is rarely, or never, seized in its widest transverse diameter. It is seized by the conjugate at a point anterior to its greatest width, that is, at the bi-temporal rather than the bi-parietal diameter.

The chief objection brought against turning in a narrow pelvis is the fact that it exposes the cord to compression, such as occurs in breech presentations. Dr. Simpson and others are of the opinion that a slight projection of the promontory of the sacrum gives a marked hollow on either side, in one of which the cord is better protected than in case of normal pelvis.

Any destructive operation should rarely need be considered in a moderately contracted pelvis, providing due skill and prompt action were shown in the employment of version; having failed in this, we must then resort to perforation to the aftercoming head. But only when the child is dead, or the interests of the mother plainly contraindicate version, should craniotomy be the elective operation.

I am aware that the Cæsarian operation has been elevated of late years from the condition of a "forlorn hope" to a standard which compares favorably in statistics with any of the operations considered. Such specialists as Grandin, of New York, and others, are so emphatic in their endorsements that they would in every case select it before craniotomy, provided the child be alive. They also show such good records from recent hospital practice that they feel warranted in electing this operation in preference to forceps or version, in cases even of moderate contraction when the chances seem against the delivery of a living child. However promising the outlook for the future of Cæsarian section, it must for many years, at least, remain the exceptional procedure with the large majority of physicians in private practice.

In the case of the two other labors which I described, we stand on vantage ground, remote from the necessity of immediate action and in the possession of instructive history. The amount of contraction, not great, is chiefly in the conjugate diameter, which measures from $3\frac{1}{2}$ to $3\frac{3}{4}$ inches.

Both the patients are multiparæ. In the one case, a child had been sacrificed in the interest of the mother, who well nigh succumbed to the long and tedious labor at full term, terminated by an exhausting operation. In the other case, a married life of ten years had been filled with fear and foreboding, as the termination of each of the eight pregnancies seemed to this unfortunate woman, at least, the very gate of death.

Many of you are doubtless reminded of cases where the woman is carried through repeated pregnancies, expecting safe delivery at term by some lucky procedure, which sooner or later fails to save her life.

We need, then, no apology for violating nature's course in recommending the induction of premature labor. Nature herself sometimes shows the way by producing spontaneous delivery before full term in contracted pelves. The successful issue of these two cases justify the procedure. The statistics in the books are not altogether favorable, but they are misleading. As Professor Dorhn remarks, it is a question of values, which cannot properly be compared, because the cases involved present an endless variety of dissimilar conditions. The only fair way is to compare the results of premature labor with the results of labors at full term in the same patients. Viewed in this way, he reports 19 cases at term, with 41 children, of which 37 died, while in 25 pregnancies premature labor was induced, with 15 living children.

Milne, in the *Edinburgh Medical Journal*, Vol. XIX., furnishes the most remarkable report, namely: six women gave birth at term to 12 children, of which 11 were dead. In the succeeding 38 pregnancies, premature labor was induced, and 35 children were born living.

This operation is undertaken with the hope of saving both the child and the mother, but at all events to make more secure the safety of the mother. The twofold condition which works favorably for the child is the fact that the fœtal head is not only smaller, but much more plastic at the eighth month than at full term, so that with less compression and less time it passes through the shortened diameter of the conjugate. The loss of the child is generally due to the fact that the immature vital powers are inadequate to the pressure caused at birth, and to the struggle for existence after birth.

By premature labor, the mother is not simply saved from the hazardous risks connected with the major operations, but from the severe sufferings incident to a long labor at full term, and also from the many lesions consequent upon such labor, which often renders the patient's after life one of endless sorrow. Scarcely any one would take exceptions to this procedure in cases like the two I have described, but would hesitate to recommend it in a case of primipara of the same pelvic measurements. Professor Dorhn makes no difference between multiparæ and primiparæ, but applies to either the same treatment for the same degree of contraction. Thomas puts it in a more general way. He says that "wherever it is estimated, or as is far better where it is proved, that a child at full term cannot be delivered except by instrumental or manual means, premature delivery is called for"; and I may add to this conservative statement what many others believe, that the physician is recreant to his duty if he fails to advise it. The degree of contraction demanding this operation is, according to most authorities, one where the internal conjugate measures $3\frac{1}{4}$ in. or less, and the best time for the operation is the thirty-fourth or thirty-sixth week. Of course, this would depend somewhat on the pelvic measurements, and also on the size of the child. Some writers recommend the thirty-second to thirty-fourth week.

This operation has been too often unsuccessful in the past, in part because the operator has undertaken the task with too little knowledge or appreciation of the important subjects involved. Such as the correct estimate of the size of the pelvis by exact measurement, and of the size of the child by intelligent palpation rather than trust too implicitly in the so often deceptive calculation of the period of pregnancy, the hygienic care of infants prematurely born, the choice of method on the part of the physician, and his close attention during the operation.

When due attention is given to all the details, better results will follow, and this operation will be placed on a scientific basis, in keeping with the recent progress made in the department of obsterics.

For sake of brevity, I have omitted very much of importance, but trust enough has been said to emphasize by way of suggestion, at least, three things:

(1) The importance of the subject demands a more general study of pelvimetry.

(2) Early resort to version is a safer operation for the mother than forceps, when the head fails to engage at the superior strait, and in many cases may save the life of the child otherwise condemned to craniotomy.

(3) In premature labor, scientifically managed, we have an operation by which an immense amount of suffering may be avoided, and oftentimes a living child secured.

COMPULSORY NOTIFICATION OF INFECTIOUS DISEASES.[1]

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It is impossible with the limits of time and space at my disposal here to discuss adequately, or in all its bearings, the whole subject which such a title as this opens up before us. A brief sketch must suffice. My object will be to state a case plainly and simply for compulsory notification, to enable those who have had no practical experience of its working to form an opinion of its prospective value, and to show how frivolous and premature are the criticisms passed upon it before it has been fairly tried in conjunction with those preventive measures towards the development of which it is simply intended to stand in the relation of a means to an end.

By compulsory notification of infectious diseases we understand the legal obligation to send immediate notice respecting the occurrence of certain infectious diseases to the sanitary authority of the district in which the affected person or persons are for the time being resident, together with a few particulars of place and people for the guidance of the authority. Different persons have been made responsible for the performance of this duty under the several Acts.

In one small class the householder alone is mentioned, he or she being responsible to the sanitary authority. This system of so-called householder notification has been tried in some three urban districts, of which the town of Greenock is one, and has proved a complete failure in all. The cause of the failure is not far to seek. The majority of people do not care to notify unless compelled to do so. Under this system there is practically no compulsion, for in the event of prosecution for neglect to notify the onus of proving a guilty knowledge on the part of the responsible layman rests with the authority, and such proof in the majority of cases is not very readily obtainable. A case has recently occurred in Nottingham, where a man in good position sent a servant from his house in the town to her home in the country while suffering from scarlet fever, contracted through attendance upon his child, but in which a prosecution has had to be abandoned, because it was found impossible to produce legal evidence of a guilty knowledge of the girl's condition on the part of the master, without resorting to means to secure conviction, which public authorities in such cases are naturally loath to adopt.

This prosecution was instituted under section 126 of the Public Health Act, 1875, but had it been a case of simple failure to notify the sequel would have been the same.

Under the so-called "dual" system, which is that adopted in Mr. Ritchie's Act of 1889, and which was in force prior to that Act in fifteen of the greater towns of England, and in nearly all the smaller urban districts under notification, it devolves equally upon both householder and medical attendant, to notify to the sanitary authority direct. In practice, however, by the tacit consent of all parties, this system is almost invariably allowed to resolve itself into notification by the medical attendant alone. The accuracy of this statement has, I know, been recently called in question, but it is borne out by the unanimous testimony of all those who have had practical experience in the matter.

The "single" system, so highly lauded by the opponents of the "dual," is in force in three considerable towns only, namely, in Bradford, Norwich, and Nottingham.

Under it the medical attendant is required, immediately after diagnosis, to fill up and hand to the householder a printed notification form, which the latter in turn is directed to transmit forthwith to the sanitary authority. So much for the theory of the system. In practice, the notification is left entirely to the medical attendant, who keeps his book of forms at home, and sends his certificate direct to the medical officer of health.

In Nottingham, I have found that out of 1,508 consecutive notifications, 1,360, or 90 per cent., were made by the medical attendant as above stated; 9, or 59 per cent., by the householder in the manner prescribed by law, and the balance, less than 10 per cent., by myself, by officers of my department, by the police, or by neighbors of the affected families.

Before the passing of Mr. Ritchie's Act of 1889, which was made compulsory for all London, but optional elsewhere, compulsory notification was in force under local Acts in 56 urban districts of England and Scotland. Although local powers for its practice were obtained in some cases as early as 1876, it did not come practically into operation, except in a few cases, before 1882. Of the 28 greater English towns, including the metropolis, 17 had adopted it prior to 1889, and 11 had not, London being among the last.

In only a comparatively small number of the towns was a complete schedule of notifiable diseases adopted from the outset. In most cases an experiment was made with two or three diseases, small-pox, scarlet fever, and typhus, or small-pox and scarlet fever only,

[1] Paper read before the International Congress of Hygiene and Demography, Section for State Hygiene, London, August 14, 1891.

and others were afterwards added to the list. In one case no further addition was made until after the lapse of seven years from the outset.

The diseases more commonly notified under local Acts have been small-pox, cholera, typhus, scarlet fever, diphtheria, and typhoid fever. Under the Act of 1889, membranous croup, erysipelas, relapsing, continued, and puerperal fevers have been added. Power has also been given to sanitary authorities, with the sanction of the Local Government Board, to further expand the list by the addition of other infectious diseases, such as whooping-cough and measles.

There is doubtless much yet to be learnt from the systematic study of the prevalence and fatality of many diseases of this class in conjunction with varying conditions of social and physical surroundings, of climate, season, soil, and food supply, and therefore ample grounds for adopting a general notification and registration of cases. We must, however, guard ourselves, as well as warn the public, against supposing that the notification of all such diseases necessarily carries with it in any measure an element of prevention. The health history of our large notification towns during the past few years proves that for the present, at any rate, such is not the case.

The excellent diagrams handed in by Dr. Thorne Thorne to the Vaccination Commission, and published in their first report in 1889, show at a glance the range of mortality during the past forty years, from several diseases in this list, for England and Wales, and are well worthy of a careful study.

Against only a very small section of this so-called zymotic class have suitable preventive measures been adopted, and in their case alone has there been a decline of prevalence and fatality. There are, of course, a certain number of diseases in the enlarged schedule of the new Act, such as erysipelas and puerperal fever, which are found to diminish, as *à priori* we should expect them to, with improved sanitation. It is otherwise, however, with such complaints as whooping-cough, measles, and even diphtheria.

The first two are apparently amenable to nothing but isolation, and for them this has never, up to the present, been attempted. The issue of printed and verbal warnings, and the occasional closure of a school, may comfort the public, but they have very little effect upon the spread of these diseases.

Diphtheria, whatever may be the conditions under which it arises, or which are most favorable to its propagation, undoubtedly spreads very largely by personal contagion, and prophylaxis, without means of isolation, is practically of no avail. But, means of isolation provided, the difficulty remains of determining the diagnosis of mild and doubtful cases.

This difficulty seems likely to be a serious hindrance to the effectual preventive treatment of diphtheria, and the disease is steadily and ominously on the increase in London and many other town districts.

Enteric fever is undoubtedly fostered by insanitary conditions, and on this assumption its notification in any house or locality is often made the occasion of inquiry, inspection, and remedial action, but to what a limited extent only such action is possible the condition of the poorer parts of many of our large towns too plainly testifies. A great deal of endemic typhoid fever is often required, for instance, to induce a sanitary authority to recognize the desirability of abolishing midden-privies, of re-organizing a defective system of drainage, or of providing a public water-supply. There is, however, one fact worthy of notice in connection with typhoid fever for which we should be grateful. Whether it be in town or country there is seldom much difficulty in securing its notification. Impressed with the belief that some discoverable cause must exist, both the medical attendant and his clients are for the most part too anxious to secure its removal to think about concealment.

Scarlet fever and small-pox are the two diseases against which, in recent times, prevention has chiefly directed its energies. Vaccination, isolation, and disinfection in the first, and isolation and disinfection in the second, are the agents by which it has worked.

In the case of small-pox, so great is the popular dread of the disease, that but little difficulty has been experienced in enforcing either vaccination or isolation, or both together, according to the trend of local opinion. The value of notification, when associated with isolation, quarantine and disinfection, completely carried out, finds striking illustration in the immunity of Leicester from small-pox in recent years.

With scarlet fever the case is different. Many towns are now provided with a large amount of hospital space, specially provided for it, and a considerable number of patients are undoubtedly isolated, but even in the case of those towns furnished with the best and most ample accommodation the actual proportion of admissions to total cases has, until quite recently, been exceedingly small. The following figures for Nottingham, where a large number of scarlet-fever beds have long been provided in the town isolation hospital, strongly support this contention.

Year.	Number of Cases notified.	No. removed to Hospital.	Percentage of Removals.
1882*	1,029	56	5.4
1883	456	6	1.3
1884	370	24	6.4
1885	390	47	12.0
1886	351	51	15.0
1887	615	275	45.0
1888	643	318	49.0
1889	1,047	745	71.0
1890	563	800	83.0

* First year of compulsory notification.

Isolation hospitals then have existed in the majority of our large towns for many years past, but their accommodation has not been sufficiently good or ample and they have not been at all generally used, except for such diseases as typhus and small-pox, until within the past few years. A study of the recent health reports of almost any of these large towns will show the truth of this, and will further suggest that the practical adoption by the general public of the principle of hospital isolation in lieu of home nursing, even in the case of those diseases for which many hospitals are now specially provided, must not be looked for at once.

These hospitals have too often been temporary structures of a comfortless if not forbidding aspect, economy in building with a view to early destruction, which, however, was seldom carried out, being the object of first consideration with the builders. That, however,

was a mistaken policy; the hospital must be made, if possible, more attractive and healthier than the home. When this is done, as I am pleased to say, in some cases, it now has been, we shall begin — slowly at first, but certainly and completely in the long run — to secure the end we have in view, namely, the general acceptance of the principle of hospital isolation for the infectious sick of all classes.

Recent experience has taught us that permanent hospitals, replete with every modern comfort and convenience, can readily, and much more readily than the temporary buildings, be kept clean and healthy, and they may with certain precautions be safely used alternately for different diseases. The required ratio of beds to population has been variously stated. Dr. Buchanan, in 1876, laid it down that one bed per 1,000 would probably be the general requirement of the country as a whole. His estimate has been considered excessive, but if it has actually proved to be so in any instance, this will probably have arisen through neglect to use the hospital, and not through a lack of suitable cases for isolation. In estimating, however, the amount of hospital accommodation required by any particular locality it is always necessary to take into consideration such points as the class, occupation, and density of the population, and the local history of endemic and epidemic disease, the mere mention of which are sufficient to suggest the impossibility of laying down a rule applicable to all cases.

The statistics for the country as a whole, as well as those for particular localities, as I have already stated, all go to show that the only modern zymotic diseases which have declined during recent years are (*a*) those which are known to depend on insanitary conditions for their propagation, and which, therefore, the improved sanitation of modern times will have had the effect of reducing, and (*b*) those among the personally contagious class for which isolation, and, in the case of small-pox, vaccination have been practised.

It is altogether too early at present to attempt to estimate the full potential value of notification by an appeal to statistics, but adopting the criteria mentioned above, they are found to yield a result by no means unfavorable to it. Scarlet fever and small-pox have markedly declined in the majority of the notification towns.

If we compare the scarlet-fever death-rates of the 10 larger notification towns mentioned above in the decennium 1873–1882, prior to notification, and in the period of eight years, 1882–1889, subsequent for the most part to its adoption, with the corresponding rates of the remaining nine non-notification towns, of which particulars are given by the Registar-General, we obtain a result strikingly in favor of the former group. I give averages of the death-rates, and not average rates, in order to make due and proportional allowance for the varying experience of separate populations of widely different numerical values.

This method applied to the case under consideration has, I am aware, met with criticism from professional statists, but I fail to see how the value of the figures for different towns of various sizes which have made the experiment of exercising certain precautions against the spread of infectious disease under different circumstances of liability, incidence, fatality, and the like, with different degrees of efficiency, can be duly expressed without it. In denoting chemical results, the prices of articles in daily use, the liability to crime among the several classes of society, such a method is accepted without cavil. Why not here?

Ten Notification Towns.

Average of the death-rates, 1873–82	0.94
Average of the death-rates, 1882–89	0.40
Decrease per cent.	—56

Nine Non-notification Towns.

Average of the death-rates, 1873–82	.86
Average of the death-rates, 1882–89	.49
Decrease per cent.	—43

The corresponding figures for small-pox, as might perhaps have been expected, are more favorable even than these, although I have included the figures for 1880 and 1881 in the last group, in order to introduce the epidemics of those years.

Ten Notification Towns.

Average of the death-rates, 1873–82	0.067
Average of the death-rates, 1880–89	0.035
Decrease per cent.	—48

Nine Non-notification Towns.

Average of the death-rates, 1873–82	.071
Average of the death-rates, 1880–89	.048
Decrease per cent.	—36

If we take the numbers of deaths instead of the death-rates, the results obtained are practically identical. The average decrease per cent. in the deaths from scarlet fever for the nine non-notification towns is —46 (that for London being also the same), and the average decrease in the ten notification towns —55.

The corresponding small-pox figures are: for the nine non-notification towns —36, for London — 71, and for the ten notification towns —52.

The advantages to be gained from notification are so many and so great, and at the same time so manifest, that it would be an act entirely of supererogation to offer to demonstrate them by an appeal to statistics, were it not that attempts have been made to discredit the whole system by such agency.

It must be apparent to any thoughtful person who devotes attention to the subject, that notification, with isolation, disinfection, and the whole armament of sanitary precautions, are the natural and legitimate outcome of revolution as applied to preventive medicine. Powers have been conferred under the earlier Public Health Acts which it would be impossible to exercise with due advantage to the community without the help of such a measure as compulsory notification. By it the sanitary authority is simply made aware of the existence of diseases which are known to be more or less preventable, which it is every one's wish to prevent, and with the spread of which the authority alone possesses the means to cope.

Whatever the suspected vehicle of contagion, whether it be air, food, water-supply, or household fomites, officers of the authority alone can make effectual investigation, and enforce the observance of necessary precautions. They alone can keep watch over the sources of water, milk, and food, can act upon the suggestions afforded by concentration of cases around schools, factories, and the like places, or among the customers of milk-sellers or other tradesmen. They alone can secure the reform of insanitary conditions found in connection with those diseases known to be fostered by such agencies. In fact, I repeat that it must be apparent to all, who have eyes to see, that the sanitary authorities alone can exercise due control of infectious diseases as affecting the community, and that without compulsory notification any such work

that they do must be done at a great disadvantage. The history of compulsory notification has hitherto failed to justify the evil predictions that have been made concerning it. Medical men continue to notify, and yet retain the confidence of their patients. In many cases they are glad to have removed from their shoulders the responsibility of deciding upon the necessary precautions to be taken. Only a very small proportion of cases are concealed, and most deaths from infectious diseases are certified correctly. Friends and neighbors, clergymen, and others, it must be remembered, are often alive to the necessity of reporting cases, even if the persons directly responsible are not.

In non-notification towns, owing to the facilities for concealing cases during life, it will often happen that deaths are certified as due to complications, instead of the original disease. I have known this to occur on more than one occasion, and can conceive the possibility of its more or less general practice where sufficient inducement exists. However this may be, it certainly stands to reason that the small amount of concealment that is possible in towns with notification, will be less injurious to the community than the wholesale concealment that is going on in those without it.

All the arguments urged against compulsory notification bear the impress of the weak case that lies behind them. Like every other desirable innovation, it was and is certain to meet with opposition, but the opposition it now has to face is as nothing compared with the storm which attended its first introduction, or that even of civil registration.

When compulsory notification was first adopted in Nottingham, the whole local profession rose in arms against it. During the present year an opponent of the new town hospital scheme, in a full meeting of the Medical Society, was unable to find a supporter in criticising the work of compulsory notification and isolation in Nottingham. Let us not fear opposition. No good cause ever yet throve without it, and that our cause is good we have evidence in the fact that its sole aim is to promote the health and welfare of the community.

Reports of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

SECOND TRIENNIAL MEETING HELD IN WASHINGTON, SEPTEMBER 22, 23, 24 AND 25, 1891.

GENERAL SESSION. — TUESDAY. — FIRST DAY.

THE Congress was called to order by the Chairman of the Executive Committee, DR. WILLIAM PEPPER, who spoke briefly as follows:

In appearing thus for the second time to represent the Executive Committee of the Congress of American Physicians and Surgeons, it must be stated that we have felt greatly encouraged in our task by the liberal confidence reposed in us, and by the manifest deepening of professional interest in our meeting. The success of the first Congress in 1888 gave assurance of the value of the new organization. It is none too early to announce, in view of the large attendance on the part of the participating societies; of the presence of so many guests of high distinction; of the admirable programme of our scientific work, that the second Congress will more than confirm that assurance.

This renewed success owes nothing to the power of novelty; nor does it depend upon any feeling of loyal attachment such as strengthens older associations. The fundamental thought which prompted the organization has proved itself sound. Vigorous and profitable scientific discussion is difficult in large assemblages, and the more so when but a small proportion of the members can be present at successive meetings. So it soon came about in our extensive country that each great branch of medical work is represented by a special National Society, holding annual meetings at convenient times and places.

As many men belong to more than one such society, and as an increasing number of subjects of high importance demand discussion in more than one special body, owing to their varied aspects, there soon grew up the further thought that good results would follow if all the special National Societies should hold, at convenient intervals, a meeting at the same time and place. So soon as this thought was expressed it met with approval. To the proposed conjoint meeting the name of "The Congress of American Physicians and Surgeons" was given. In this, the second Congress, there are fourteen participating societies. It is believed that all the important branches of medical science, with the exception of Obstetrics, are adequately represented.

These societies have relinquished none of their independence or individuality in entering into this federation.

In two out of three years they hold their separate meetings as heretofore; and even in the Congress years the arrangements for each society, the preparation of its scientific programme, the decision as to the number of its sessions and the hours and places of meeting, the selection of its invited guests, the decision as to what, if any, official entertainment shall be provided, are left to their respective officers, and their representatives on the Committee of Arrangements of the Congress.

It is expected that this reservation of complete autonomy to each body will preclude the occurrence of feelings of jealousy or antagonism in connection with the Congress. Motives of personal ambition, save that of an honorable desire to promote the general interests of the profession, have been excluded by the form of organization.

But, however judicious this plan may be, and however successful the Congress itself, the hopes of those who have labored for its establishment will be dashed if the life and work of the individual participating societies are not influenced by it positively for good.

It is no light matter to share in an organization which stands for so much as does this Congress of American Physicians and Surgeons. It is through the participating societies alone that membership in it is to be acquired. So that while, doubtless, each society has already been watchful as to the scientific qualifications of every applicant for admission to its ranks, it is to be hoped that this watchfulness will be doubled by the remembrance that such admission carries with it the right of membership in this larger and more strictly scientific body. While, too, it needs but a reference to the records of our participating societies to show the highly creditable character of their work through successive years, it should surely act as an incentive

to the maintenance of an even higher standard to remember that the level reached by each will affect the fame and force of our Congress, which must clearly be, in a peculiar sense, the exponent of our highest medical attainments at the bar of national and international opinion.

It may be doubted if further steps are needed in the organization of the medical profession in this country. Our great series of local, county and State societies, culminating in the powerful American Medical Association, form a representative system which we regard as the most perfect possible for the entire profession; and to this there has been added, as I have shown, a series of National Special Societies and the conjunction of these in the present Congress.

It would seem as though the friendly and harmonious co-operation of these bodies, animated by the common purpose of promoting science, serving the community and elevating the profession, may be trusted to secure these noble aims.

Dr. Pepper then introduced the President, Dr. S. Weir Mitchell, of Philadelphia.[1]

The first scientific matter brought before the Congress was the discussion of the

CONDITIONS UNDERLYING THE INFECTION OF WOUNDS, INCLUDING A DISCUSSION OF DISINFECTION WITH REFERENCE TO TREATMENT OF WOUNDS, OF THE RELATION OF BACTERIA TO SUPPURATION, OF THE RESISTANCE OF TISSUES TO THE MULTIPLICATION OF BACTERIA, AND OF THE EFFECTS OF ANTISEPTIC AGENTS ON WOUNDS.

Dr. William H. Welch, Baltimore, Md., said that the presence of certain kinds of bacteria, as an essential condition of wound-infection, is so well established that discussion of this point is not likely to arise. The comparatively simple conception that a wound to which bacteria gains access, necessarily becomes infected, has been greatly modified. The traumatic infections present their own peculiar problems. The doctrine of wound-infection involves the consideration of many varying and often complicated factors relating both to the agents of infection and to the individual exposed to the infection.

The subject was considered under these heads:

(1) What are the micro-organisms concerned in the infection of wounds, and how do they act?

(2) How are we to explain the great differences in the effects produced by the pyogenic micrococci; their apparent harmlessness under some conditions, their fatal influence in others?

(3) What are the ways by which bacteria gain access to the wound?

(4) How often are bacteria to be found in wounds treated antiseptically or aseptically? What are the character of these bacteria and where do they come from?

(5) What are the best means of surgical disinfection?

The observations as to the relative frequency of the ordinary pyogenic staphylococci and streptococci are not altogether concordant. The yellow staphylococcus appears to be more common in furuncles and abscesses than the white staphylococcus. The author had found a white staphylococcus in small stitch abscesses and minor grades of inflammatory disturbance in wounds treated antiseptically and aseptically, which differs in certain particulars from the staphylococcus pyogenes albus. He suggested that it be called the staphylococcus epidermidis albus. The efforts to differentiate into distinct species the pathogenic streptococci have met with little success. The list of bacilli which may be concerned in suppurative and other inflammatory affections is much longer than was formerly supposed. The bacillus coli communis was referred to. The chief interest of the observations being that they furnish an illustration of the possible predisposition to infection afforded by intestinal lesions, and also give an example of the much disputed auto-infection. Of the suppurative inflammations examined bacteriologically with negative results, may be mentioned abscesses in which the bacteria were presumably dead, several cases of pyosalpinx and suppurating buboes, and some abscesses of the liver.

There is reason to suppose that the process of suppuration serves a useful purpose, and is one of the most efficient weapons employed by nature in combating invading micro-organisms. Exactly how the abscess formation checks the invasion of bacteria, we do not know.

The quantity of a culture of the staphylococcus aureus required to produce suppuration is not the same for all tissues and all parts of the body. There are also variations in virulence of different cultures of the pyogenic cocci. Inasmuch as it is by their toxic products that the pyogenic bacteria do injury, it is not surprising to find that it makes a great difference in the result whether or not these bacteria enter the tissues already equipped with a reserve force of this poisonous material, or whether we must begin the fight unarmed. This matter of accompanying toxines is possibly of great importance in our understanding of the potentialities of the living agents of wound-infection. The differences in virulence found to exist between inflammatory exudates from various sources are much greater than those observed in the cultures of the same bacteria on artificial media.

In regard to the conditions in or about a wound which favor the lodgement and development of pyogenic bacteria, it may be said that anything which interferes with the integrity of the living tissues in a wound is a predisposing cause of suppuration. Chemical irritants, such as carbolic acid and corrosive sublimate, favor the development of micro-organisms. A solution of corrosive sublimate, as weak as 1 to 2000, is followed by a distinct line of superficial necrosis. We are not so well informed as to the influence exerted by blood in a wound. Most surgeons lay great stress on hæmostasis in surgical operations, while others advise that in certain classes of cases the wound be permitted to fill with blood-clots. Is this a source of danger? Fresh blood-serum does not possess any such germicidal power over the pyogenic cocci as it does over the typhoid and many other bacteria. The power of the living tissues to overcome a certain number of pyogenic bacteria is well recognized, and the tendency of modern surgeons is to respect these tissues more and more, not to destroy their vital capacities by the unnecessary application of strong chemical disinfectants, not to bruise them, not to make them too tense, not to strangle them, not to suffer the presence in wounds, of spaces and foreign bodies which remove bacteria from the influence of the living fluids and tissues.

[1] See page 309 of the Journal.

Of the various ways in which pathogenic bacteria gain access to wounds, that by contact with infected hands, instruments, and other objects offers the greatest danger. The possibility of infection from the air cannot be ignored. Even in wounds treated aseptically or antiseptically, it is not uncommon to find bacteria. The skin may have all sorts of bacteria upon it, but in addition, it has its own distinctive bacteria. After the skin has been thoroughly washed and scrubbed, the prevailing organism will be found to be the white staphylococcus. This is often found in parts of the epidermis deeper than can be reached by any known means of skin disinfection. We can now understand how, without any flaw in the antiseptic technique of the surgeon, this micro-organism may be found present in wounds, and we have here an explanation of the frequent occurrence of stitch abscesses, although the inference should not be drawn that the white staphylococcus is the only bacterium concerned in the production of these annoying complications. How much practical importance attaches to the demonstration of this coccus, the author was not prepared to say. The surgeon with good technique who does not bother himself about this coccus in the deeper layers of the skin is not likely to be severely punished by the behavior of his wounds. Those who put in drainage-tubes and other extraneous substances will have to consider it. Some surgeons, on the basis of researches on the bacteria of the skin, have abandoned skin sutures, the edges of the wound being brought together by subcutaneous sutures.

In regard to the method of surgical antisepsis, it was said that the conditions for efficient chemical disinfection have been found to be far more complicated than was formerly supposed, and the substitution, wherever applicable, of the simple and certain methods of disinfection by heat is to be commended. Chemical disinfectants still have their place for many purposes in the operating room, but their place is not in healthy wounds. Thorough scrubbing of the skin with soap and water by a sterilized brush removes many of the bacteria, but not all, and cannot be regarded as satisfactory means of cutaneous disinfection. Corrosive sublimate accomplishes much less than is generally supposed. The best results obtained have been by a method in which a saturated warm solution of permanganate of potassium, followed by a similar solution of oxalic acid, plays the principal disinfectant rôle, and this is the procedure now adopted in the gynecological and surgical wards of the Johns Hopkins Hospital.

The best plan of sterilizing the skin is shaving, followed for a day or two, if there is time, by some antiseptic ointment properly prepared; the skin should then be washed with sapo viride of the German Pharmacopœia, with five per cent. of lysol or hydro-naphthol. Then there should be worn until the time of operation a compress, wet with some liquid non-irritating, antiseptic, such as creolin or lysol (five per cent.), or hydro-naphthol in saturated cold aqueous solution. At the time of operation there should be a final scrubbing with hydro-naphthol soap, with shaving, and then the skin washed with equal parts of alcohol and ether, or alcohol and turpentine. Where there is not time for this, we must content ourselves with the thorough use of the nail-brush, the razor, and antiseptic soap, with the subsequent use of alcohol and ether.

Instruments are best prepared by dry sterilization, as this injures them less than other plans.

In regard to sponges, there is nothing to be added to the well-known directions. It would seem better to use some cheap absorbent material, which after use could be thrown away.

Silk is best sterilized by placing it in a test-tube, then plugging, and keeping for an hour in a steam sterilizer upon two different occasions. Silk-worm gut may be prepared by immersion for a few hours in a one per cent. aqueous solution of corrosive sublimate and then preserving in alcohol. Catgut is best prepared by immersion in benzine or ether to remove fat; it is then dried and soaked for one or two days in a one per cent. watery solution of corrosive sublimate, after which it is dried and transferred to oil of juniper berries, and from this to strong alcohol containing one per mille of sublimate. In this, if desired, it can be boiled. It may be chromicized before putting it in oil of juniper.

The hands, even after having been in contact with septic matter, may be sterilized by the following method: Wash with soap and water, using nail-brush; then wash the hands and arms with flour of mustard, as though it were powdered soap (this will remove all odor); then wash with sapo viride (G. P.), to which has been added five per cent. of lysol, creolin or hydro-naphthol; then rinse and immerse in a strongly-colored solution of permanganate of potassium; they are then rinsed and immersed in a solution of oxalic acid, sufficiently strong to decolorize the skin in two or three minutes; the oxalic acid is rinsed off, and the hands may be considered aseptic.

Drainage is probably required only in septic or affected cases.

After an ideal aseptic operation, we need only a sterilized and a protective dressing. In some cases there may be advantage in impregnating the dressing with some antiseptic.

Among miscellaneous sources of infection may be mentioned the use of an unguent applied to the skin to prevent the adhesion of dressing. Experiments have shown that ointments made with even ten per cent. of resorcin or naphthalin, without the application of heat, contain bacteria. The same ointments heated to the temperature of boiling water seem to be sterile, and to suffer only from air contamination.

Dr. ROSWELL PARK, of Buffalo, N. Y., said: The study of wound-infection is inseparable from that of immunity; and when we have learned that which constitutes or favors immunity, we shall have approached nearer that which is now a *terra incognita*. Immunity is a complex condition not dependent upon any single factor; and from pathological interest as well as from clinical importance, our endeavor now must be to analyze the main question of what constitutes or confers immunity, and try to recognize and then solve its various subordinate queries. This statement, too, is inseparable from another which is to the effect that the surgery of to-day should aim to be aseptic and not merely antiseptic, in other words, we should abolish sepsis and not merely aim to antidote it or conquer it when present. The condition of sepsis is a complicated one, consisting of a poisoning by ptomaines, toxines and albumoses having widely different properties. Some of these substances are so antagonistic that one may neutralize the other. In the intestinal canal there are produced poisonous substances which are taken up by the absorbents, but then are filtered out by the liver before reaching the

systemic circulation. It is by virtue of this depurative action of the liver that many cases of septic intoxication in surgical patients are avoided. In a division of the general subject of blood-poisoning, a condition which may be called intestinal toxæmia or entero-sepsis, deserves a distinct place. This occurs not infrequently, and may merge into a condition of sapræmia or septicæmia, but if promptly checked there is a speedy return to a desirable condition both of wound and patient. By no means do all cases of surgical sepsis have their origin in or about the wound.

We have learned a little in reference to the antagonism of different bacteria, and the poisons which they produce. A microbe may enter the system and produce a proteid or albuminose poisonous to the animal, while the introduction of some other substance may neutralize this poison and save the animal. The principle is the same whether the antidotal poison be injected as such or a second species be inoculated by which it may be produced. Brunton has suggested that blisters do good in this way, by an endermic administration of proteids derived from the blood, but so altered in their passage from the vessels, as to have a different effect, and probably by their chemotactic properties. He also suggests that bleeding may act in a similar manner, as it has been shown that the abstraction of venous blood causes an absorption of proteid matters from the tissues, and these may have an action of their own on the tissues with which they come in contact. The benefits of free purgation probably find here their proper explanation.

The term chemotaxis to which reference has been made relates to that faculty possessed by all motile bacteria of moving towards or away from certain substances which seem to attract or repel them. The same power is inherent in the plasmodia or myxomycetes, as well as in various other unicellular organisms, and leucocytes if not other cells of the human body possess the same property. Chemotaxis is spoken of as positive or negative, as there appears to be attraction or repulsion. Among the most actively positive chemotactic substances are cultures of bacteria; these are powerfully attracted by the leucocytes. The effect is the same whether the cultures are alive or have been killed by bolting. The active agent is some product of the life and growth of the bacteria. The leucocytes thus attracted act as scavengers for the surrounding tissue.

These facts have an important bearing upon questions which vitally concern the surgeon. In the light of these researches, it is difficult to see how the possibility of phagocytosis can be denied, and the impossibility of this process looms up in a flood of light when one discusses the phenomena of suppuration or of other kinds of infection as well as of recovery or immunity therefrom. Support of the phagocyte theory has come from the work of Hankin on defensive proteids. From the spleens and livers of various animals he has isolated the proteid which has the power of killing bacteria, and he has found that this, while absent from normal blood, could be obtained from the blood of febrile animals.

The separation of dead and dying matter is a process in which the formation of proteid material figures largely. An important bearing of these facts is on the use of so-called antiseptic agents. The ideal antiseptic is probably blood-serum, its parasiticide properties being in all probability connected with the existence in it of a globulin which is soluble only in a weak solution of common salt. This may explain the well-known antiseptic action of common salt.

It has been stated that by no means all the sources of sepsis concern the wound itself. The other principal sources of infection may be classified as follows: (1) Previous long-existent toxæmia, as syphilis, diabetes, acetonæmia, lithemia, alcoholism, malaria. (2) Previous anatomical changes which reduce vitality, as inherited diathesis, old age, amyloid change, chronic and acute nephritis. (3) Recent or acute toxæmia, as uræmia, typhoid, intestinal toxæmia, stercoral toxæmia. (4) Other acute conditions, as starvation, scurvy, anæmia. (5) Conditions of environment, as bad hygienic surroundings. (6) Effect of anæsthetics. (7) Effect of antiseptics.

Antiseptics may favor infection in more than one way. Mercurial and iodoform poisoning are not uncommon. When this is established the case becomes one of acute toxæmia. The wounds may fail to unite and suppuration may occur. Again the chemical reaction between the vital fluid and the antiseptic, may cause a loss of the properties of the antiseptic agent, while the tissues on which it acts may have their constitution so changed as to favor rather than resist infection. Investigations make it appear best to keep all antiseptic agents away from absolutely clean, fresh surfaces. The value of blood-serum as an antiseptic has been abundantly shown. This will be poured out in quantity sufficient to serve not only as a cohesive but as an antiseptic agent. The question here arises as to what is the best antiseptic. It would appear that for most purposes peroxide of hydrogen is the ideal antiseptic, as it not merely destroys living organisms, but by oxidation of undesirable and infected material, acts as a scavenger of the tissues. We, however, have yet to learn how to utilize to the fullest advantage the properties of blood-serum.

Direct infection may be of two varieties, self or acute infection and contact infection. The principal sources of contact infection are as follows: (1) Skin and hair. (2) Instruments. (3) Sponges or their substitutes. (4) Suture materials. (5) The hands of the surgeon and his assistants. (6) Drainage materials. (7) Dressing material. (8) Miscellaneous, for example, drops of perspiration, an unclean irrigator nozzle, the nail-brush, the clothing of the operator or bystanders, etc.

Dr. Park presented the following conclusions:

(1) Study of wound-infection and of the septic condition thereby produced is inseparable from a study of what constitutes immunity.

(2) By a study of immunity is furnished the best clue to a due appreciation of the principles of asepsis.

(3) The surgery of the future must aim to be aseptic; for, so far as fresh cases are concerned, we have passed the merely antiseptic era.

(4) Asepsis is to be achieved not alone by attention to the wound and the paraphernalia of operation, but by the closest regard to the patient's organs and tissues.

(5) Sepsis may arise from circumstances and conditions other than those pertaining to the wound itself, although hitherto practitioners have been too prone to scan solely this field when searching for its cause.

(6) Sepsis and infection are combated in more than one way: by natural agencies, and by inherent properties of cells and fluids totally aside from the measures

which the surgeon institutes, and the wisest man is he who studies to take advantage of these vital activities rather than introduce new and conflicting elements from without.

(7) A recognition of the power of chemotaxis possessed by organized and unorganized materials in such varying degree, can be utilized to great advantage so soon as it can be reasonably clearly defined.

(8) A study of chemotactic activity appears to impress one with the truth of the phagocyte doctrine, which, if proven, is one having a large bearing upon the principles as well as the practice of the surgery of the future.

(9) The proteid material contained within cellular infectious organisms both plays such a rôle in causing chemotaxis as well as in poisoning the animal infected, that we have reason to eagerly welcome all knowledge concerning it.

(10) So fast as such proteid material can be isolated, we need among other things, to study its effect upon the commonly used antiseptic agents.

(11) We need to study much further the antitoxic and bactericidal properties of human blood-serum, and the means by which we can avail ourselves of the same.

(12) Some such classification as I have attempted to give of the various causes of lowered resistance to infection, or of the causes of vulnerability or susceptibility, will certainly assist in a due appreciation thereof and will often aid in so fortifying the patient that he may resist infection to which he would otherwise succumb.

(13) The condition of enterosepsis, fæcal toxæmia, stercoral intoxication, or whatever it may be called, is certainly one which every practitioner has to fear and against which we should assiduously guard. It is not sufficiently generally recognized and combated.

(14) A sub-form of this condition might justly be made and entitled gastro-sepsis, comprising cases where defective stomach digestion often from dilatation brings about a lithæmic or other toxæmic condition which favors infection.

(15) Antiseptic agents in the past have worked a revolution in surgical practice and results; we have now reached a time when we know that they all have their disadvantages and also understand how if we are strictly antiseptic in our work we can afford to discontinue their application to wound surfaces.

(16) But the insurance of aseptic character of such work necessitates the use of antiseptic agents of some kind upon everything which may directly or indirectly come in contact with these surfaces.

(17) When this work is strictly aseptically performed, the use of drains or further employment of antiseptics is either an expression of mental uncertainty or of fear. It may be in the interest of humanity, undoubtedly, it often is, but it is not attaining the ideal of scientific work.

DR. ARTHUR T. CABOT, of Boston, referred to the debt which practical surgeons owed to the scientific workers. It is the knowledge of how to obtain aseptic wounds that has revolutionized surgery. Reference was next made to the phagocytic action of the cells and to the germicidal action of the blood-serum. The only question is, as to which of these processes is distinctly destructive. The bacteriological action of the blood-serum has been proved. These observations may serve to explain some of the phenomena in wound fevers. It may be that in erysipelas the irritation set up by the application of blisters, iodine, etc., may serve to limit the spread of the disease by the action of the blood-serum on the micrococci of the disease.

In treatment of wounds it is desirable to avoid placing animal sutures in the wound. It is better to close all spaces in the wound by pressure. He had found by culture experiments, that, where the skin prior to the operation was free from organisms, yet, at the close of the operation, their presence could be demonstrated, showing that bacteria had been sown on the wound by the air or otherwise. If necrotic tissue or animal sutures be present, they might constitute a nidus for the development of the bacteria.

MR. THOMAS BRYANT, of London, said that if bacteria are the seed we must remember that the soil is not of less importance. If the soil is not suitable for the growth of the seed it will not grow. No surgeon would operate on a patient except in a case of urgency until the subject had been prepared for operation. In order to prevent the entrance of the germs, irrigation is of service. For that purpose iodine water made by adding a few drops of the tincture or solution of iodine to water is the most valuable. This may be made of a light cherry hue for clean wounds and of a dark cherry for dirty wounds. It also acts as a good styptic, as a dressing he uses wood-wool. The wound is dusted with iodol, one part to one to five parts of boracic acid. In every operation there is a certain amount of molecular death, and drainage is required for thirty-six hours. Pressure is better than deep sutures for bringing the deeper parts of the wound in contact.

DR. HAROLD C. ERNST, of Boston: While it is true that nearly all forms of suppuration are attended by bacteria, yet it has been shown that a process answering to suppuration can be produced without the action of bacteria. The products of this suppuration, however, do not produce activity when introduced into other animals. It has been shown that some of the agents used to destroy bacteria, really favor their growth by diminishing the chemotactic power of the surrounding tissue-cells. Notwithstanding laboratory experiments show the possible occurrence of chemical suppuration, it still remains to be demonstrated that the infection of wounds as seen in practice, occurs without the influence of bacterial activity. The most important lessons taught by investigations in this subject, are those which warn us that our pupilage is not yet over and that we are but entering upon the first stage of our knowledge of the processes spoken of here to-day.

MR. JOHN CHIENE, of Edinburgh, said that he had assisted Professor Lister during the whole of his time in Edinburgh. The longer he lived the more he believed in the work of Lister and the impress that he had made on surgery. He considered the bacteriological investigations as of the greatest importance, for on these the surgeon must depend in his daily work. Lister long ago spoke of the antiseptic value of the blood-clot, but long before, John Hunter pointed out the value of the blood-clot. The speaker considered that the spray was of great service. The term "integrity of the tissues," had been used by both speakers, but John Hunter had also laid stress on the "vitality of the tissues" which he defined as "the power of the tissues to resist putrefaction." He thought that not only by improving the soil, but by destroying the plant the best results would be attained.

(To be continued.)

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THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THE Second Triennial Meeting of the Congress of American Physicians and Surgeons has been held in Washington, during four days of the present week. The morning hours of these days were devoted to the meetings of the component associations and societies, and the afternoon hours to the development and discussion of three selected subjects by the Congress as a body.

There are now fourteen component associations and societies, varying in individual membership from about one hundred to about fifteen. The total membership is about six hundred. Of this number, five hundred and thirty-three were registered, and five hundred were in actual attendance. Sixteen gentlemen from Great Britain and the Continent, of distinction in their various departments of medical and surgical science, were present as guests: Sir William MacCormac, William M. Ord, Thomas Bryant, Reginald Southey, Reginald Harrison, Howard Marsh, Arthur E. Durham, W. W Ord, all of London; W. T. Gairdner, Glasgow; John Battey Tuke, Edinburgh; John Chiene, Edinburgh; D. J. Cunningham, Dublin; F. H. Haynes, Leamington; Dr. Hoffa, Würzburg; Dr. Florian Beely, Berlin; Dr. Ryerson, Toronto, Canada.

The Congress was in most respects an unqualified success. There were two drawbacks, however, one avoidable and the other possibly unavoidable. The hall for the general meetings, in the Grand Army Building, was poorly adapted to its purpose. The acoustics were bad, and the result was trying, both to speaker and hearer, in fact, the word hearer is scarcely appropriate; it should be rather the one who desired to hear. The weather was a particularly fine specimen of the kind which seems to be reserved for similar meetings if held in Washington in June or September. The first two and a half days were hot in a way which makes activity of any sort a weariness to the flesh and the spirit, but predisposes to the active formation of ptomaines in the intestinal tract. It was hardly a sufficient comfort to those who had suffered in the same way before to be reminded that the thermometer was in the nineties all over the country, that the children of Minnesota had been cut off from school privileges and that it was just what the corn crop needed.

There are, it is true, many reasons why the time chosen for the meetings of these Triennial Congresses — the fourth week in September — is the best time to have them. The participants have had the leisure of vacations in which to prepare their contributions; they have been refreshed by the vacation's rest; the winter's work has not begun. There are also many strong arguments in favor of the national Capital as the proper place of meeting of a national organization of this kind. All this must be granted. At the same time, experience has shown us that the Capital is apt to welcome meetings at this season with too much meteorological fervor. The air was not only hot, but lifeless. It is difficult, under such circumstances, to keep the attention profitably fixed, and the mind keenly alert — as the programme offered demands — from 10 A. M. to 1.30 P. M., and again from 3 P. M. to 6 P. M., and that for four days. That the very considerable number of participants who were their own patients should exclaim: "Would that the time or place were different!" is not to be wondered at. The physiologists, who probably do not desire to interest themselves in pathological processes, expressed their feelings in the form of resolutions — resolutions in which the gynecologists refused to join; although by Thursday night, but six out of forty or fifty of these specialists were left to respond to the last call for dinner.

After all, the greatest good of the Congress is what every one desires most; and the members will doubtless continue to lay their gastro-intestinal tracts upon the altar of the Congress if by such an offering its continued usefulness and vigor can best be secured. But it was suggested that possibly the winter vacation would be a feasible time.

The programmes were perhaps too full, and some of the papers presenting large subjects in varied aspects were too long for discussion. One association offered sixty-seven papers on its programme, and in the general afternoon sessions papers covering an hour of rapid reading were presented. It is to be hoped that the component associations will make their arrangements so as to leave the afternoons free for the general sessions in which all should participate.

In all other ways the Congress was harmonious, satisfactory and successful in a high degree. Its hopes and objects are clearly and concisely stated by Dr. William Pepper, the Chairman of the Executive Committee, in the brief address with which he called the general session to order on the first day.[1] These hopes and objects have been greatly encouraged and forwarded by this second meeting, and this is due, in a a large measure, to the zeal and assiduity of the Ex-

[1] See page 316 of the Journal.

ecutive Committee and the Committee of Arrangements.

Dr. S. Weir Mitchell, of Philadelphia, as the graceful and efficient President, delivered an interesting address, which is published at page 309 of this issue. The addresses before the Associations of Physicians and the Orthopedic Association are also published this week, and a beginning of the reports; and the JOURNAL will continue in its next issue the addresses, the reports, and some of the papers presented.

Lest any of our readers should regard the criticisms we have offered as captious, we will sum them up in the one statement, that the programme was too good, and there was too much of it.

ARE HOSPITALS NECESSARILY NUISANCES?

THERE seems to be a growing tendency to regard hospitals as nuisances, or at least as undesirable neighbors. The Trustees of the Free Hospital for Women not long ago purchased a lot of land in Brookline, with the intention of building a hospital to be devoted entirely to gynecological work. It would seem as if such a building could hardly affect the value of adjacent real estate very unfavorably, but apparently the owners of land and houses in the neighborhood thought otherwise. Some of the objections urged against the granting of a permission to build were unique, others farfetched and absurd, but they seem to have had weight with the selectmen of the town. The remonstrants forced the friends of the hospitals to admit that when patients were recovering from ether, there was sometimes more or less screaming, and that in warm weather it might be necessary to leave the windows open at that time. The counsel of one of the objectors remarked that the erection of such a hospital would certainly be a detriment to his client's home. There is a prejudice against hospitals, and when it is known that it is a charity hospital the prejudice is still stronger. Another important point is its influence on school-children. They will imagine a great many things, and it is just as bad to have their imagination aroused as it is to see the very worst of sights.

This surely is carrying even sentimental objections pretty far, but the real state of the case seemed to be that such an institution is a hindrance to suburban land that is being "improved for residential purposes."

A somewhat similar case occurred in Winthrop some months ago, except that in this case the hospital had already been built, and had been doing good work for a number of years, and the private houses had grown up around it. Since 1878 the Sea Shore Home had received during the summer months a large number of infants suffering from intestinal diseases, with their mothers. The number of children treated by the institution had amounted to 2,483. Within a few years extensive additions had been made to the buildings. Last winter the citizens of the town, at the annual town meeting, voted that the institution was a nuisance and that a renewed occupancy of the buildings would be opposed with the assistance of a legal injunction. With this evident intention to make the position an undesirable one, the managers felt that it would be best to remain inactive during the present season, not yielding their position, but retaining the right to carry on a home for sick children when the proper time comes.

Is it well that the unselfish efforts of those who are devoting time and money and skill to the amelioration of the lot of the unfortunate and impecunious sick should be hampered by opposition of this narrow, selfish character?

MEDICAL NOTES.

ECHOES OF THE WASHINGTON CONGRESS OF PHYSICIANS AND SURGEONS. — It is perplexing to have to decide between a discussion on recurrence of cancer of the breast, one on the relations of arterial disease and visceral changes, and one on the epidemiology of influenza — all at the same time, and all conducted by eminent authorities.

A programme which ranges over all the intervening ground from conditions underlying the infection of wounds, the late manifestations of syphilis and fibroid processes, to pneumonia in children, and from thence to the anatomy of the elephant's ear and the teeth of cheiroptera — is vertiginous.

The only paper offered the Congress from a female source was entitled, "Notes on the Hearts of Certain Animals."

For junketing there was neither time nor inclination.

Wednesday evening, after the address, the Congress was received by its President, Dr. Mitchell. Thursday afternoon the Congress was received informally by the President of the United States, at the White House.

The Surgical Association and the Association of American Physicians, with their invited guests, dined together Thursday evening, at the Arlington Hotel. About two hundred sat down to table, and Dr. J. S. Billings presided. He did not spare the invited guests, every one of whom was called to his feet. The expressions of pleasure and satisfaction with their American experiences were gratifying, as they were warm and evidently spontaneous.

The Pediatric Society was entertained by its President, Dr. Rotch, at breakfast, Wednesday morning. This Association, and many of the others, had separate dinners Thursday evening.

The Dermatological and the Association of Andrology and Syphilology dined together, Tuesday evening.

Private dinners were given by the President, Dr. Mitchell, by the Chairman of the Executive Committee, Dr. Pepper, and by Dr. J. S. Billings, of the Committee of Arrangements.

THE AMERICAN MICROSCOPICAL SOCIETY. — The American Microscopical Society held its fourteenth

annual meeting in Washington, August 10–14. Dr. John S. Billings made an address of welcome, and spoke at some length of the microscopic work that was done at Washington in the scientific offices of the Government, by the local society, in the Army Medical Museum, and particularly of that of the late Dr. J. J. Woodward. The use of the microscope in Government work was further discussed by Dr. J. Melvin Lamb. A committee was appointed to consider the feasibility of inducing American manufacturers to make their instruments of the same standard. A proposed new constitution was considered, and the society decided that it would call itself in the future, the American Microscopical Society instead of the American Society of Microscopists.

Cholera is reported to be making serious advances in Syria. It has reached Aintab on the highway to Aleppo, and its rapid extension is believed to be associated with the immigration of destitute Russian Jews. The disease has fortunately disappeared from the Hedjaz. Cholera has also broken out amongst Chinese coolies on board a steamer bound for Singapore, and a few cases resulted in Singapore itself.

Leprosy in St. Kitts.—A petition to the Queen has reached the British foreign office from the island of St. Kitts, in the West Indies, referring to the rapid increase of leprosy on the island, and praying that an order may be issued for the compulsory seclusion of all victims of the disease.

BOSTON AND NEW ENGLAND.

Food and Health Exposition. — An exhibition, under the auspices of the Boston Retail Grocers Association, will be opened in the Mechanics Building, on October 5th, and will continue three weeks. The object is to give a practical exposition of the art of cooking, and of the right ways to select wholesome food.

Dr. Albert Hoffa, of Würzburg, operated at the Children's Hospital in Boston, on Wednesday, September 16th, upon a young girl with a congenital misplacement of the hip. He performed his operation, which consists of exposing the neck of the femur, by Langenbeck's incision for excision of the hip, freeing the capsule thoroughly, severing the round ligament, deepening the acetabulum and replacing the head of the bone in its normal socket. The case is doing well at latest accounts.

Hydrophobia in Salem. — On September 9th a patient was admitted to the Salem Hospital with hydrophobia, from the effect of which he died. He had been bitten by a mad dog on July 3d. Within forty-eight hours a grandson of the patient, who had been bitten by the same dog at about the same time, died of hydrophobia.

NEW YORK.

The Department of Street-Cleaning.—Mayor Grant, with the official approval of the Board of Health, as required by law, has removed from office Commissioner Beattie, the head of the Department of Street-Cleaning; a measure which the mayor, in his communication to the Health Board, certified was in his judgment required in the public interest. This action of the mayor was in great part the result of a statement presented to him by President Wilson, of the Health Department, in which attention was called to reports of the regular monthly inspection of the streets for August, of a special inspection made on the 14th by sanitary officers of the Department, and of the report of Dr. Moreau Morris, Chief Inspector in charge of the Summer Corps of Physicians. The communication concluded as follows: "Cleanliness of the streets is regarded by this Department as very important to the public health, and it is apparent from the reports above referred to that their condition is far from satisfactory in this particular, and that this subject, for sanitary reasons, demands special attention." The mayor has appointed to the position thus vacated Mr. Thomas S. Brennan, a gentleman who has had a very large experience in connection with the charitable and criminal institutions of the city. After having served as Steward and Deputy Warden of Charity Hospital on Blackwell's Island, he was appointed, in 1866, Warden of Bellevue Hospital, a position which he held until 1875, when he was made one of the Commissioners of Charities and Correction. He served in this capacity for nearly fifteen years.

The American Association of Obstetricians and Gynecologists held its fourth annual meeting at the building of the New York Academy of Medicine, on September 17th, 18th and 19th, and a considerable number of physicians from various parts of the country attended the sessions. On the opening day an address of welcome was delivered by Dr. D. B. St. John Roosa, of New York, and in the evening a banquet was enjoyed by the members and a number of invited guests.

Yaloo, the Double-Bodied Hindoo Lad. — Dr. George Bleything, having examined the double-bodied Hindoo lad recently brought to this country, has made the following report in regard to him: "I find him to be a remarkable case of arrested development in fœtal life. The boy himself is a fine, bright, well-developed youth of eighteen years, and attached to the extremity of his sternum is the incomplete body of a twin. The arms are given out from the attachment to the sternum of the young man, without scapulæ. The trunk is short and incomplete, but terminates in a pelvis, with which the legs are connected. There would seem to be no separate heart in the parasite, and the pulse, both radial and axillary, is synchronous with that of the autosite. There is anchylosis of the joints in the undeveloped child. The young man is conscious of a sensation when this second body is roughly touched." The parasitic growth appears to give him very little inconvenience, and he is very agile in his movements.

Miscellany.

EFFECTS OF VENTILATION ON MICRO-ORGANISMS.

DR. RICHARD STERN[1] has made experiments on this subject in a room in which he could have quiet air, or a more or less complete ventilation. The openings in the walls of the room were so arranged that he could admit the air from without either at the upper part near the ceiling and convey it off near the floor on the opposite side of the room (winter ventilation), or the air could be admitted near the floor and conducted out on the opposite side of the room near the ceiling (summer ventilation). The rapidity of the ventilation was also under complete control. The air of the room was intentionally loaded with micro-organisms. Pure cultures were mixed with the dust collected from school-rooms and factories. This was then dried and pulverized and blown about the room. The air was then examined for the number of micro-organisms, by Petri's method at various times. The conclusions arrived at were: (1) That the micro-organisms rapidly sink to the floor in quiet air. The finer the dust upon which the micro-organisms rest the slower the gravitation. (2) The usual ventilation, effecting a renewal of air from one to three times an hour, has no effect upon the removal of micro-organisms with summer ventilation, and only to a very limited extent with winter ventilation. (3) Ventilation, effecting a more rapid renewal of air (six or seven times to the hour), effects the removal of micro-organisms, but slightly without a sensible draught. (4) A rapid and complete removal of the micro-organisms from the air is only attainable with a strong draught. (5) Micro-organisms are not blown off from the floor, walls, furniture, clothing, etc., even with the stronger draughts. (6) The evolution of steam in a room is not capable of rapidly and completely precipitating the micro-organisms, although it hastens this process to an appreciable extent.

[1] Sanitarian, from Zeitschrift für Hygiene.

Correspondence.

[From our Special Correspondent.]

SEVENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

MEETING AT LONDON.

(Concluded from No. 12, page 307.)

REGULATION OF THE MILK SUPPLY. — SEWAGE. — SANITARY ARCHITECTURE. — SELF-PURIFICATION OF RIVERS. — CREMATION. — COMPULSORY NOTIFICATION OF INFECTIOUS DISEASES. — FINGER MARKS AS A MEANS OF IDENTIFICATION.

LONDON, August 21, 1891.

IN the Section upon Relation of Animal Diseases to Man, the discussion was in nearly the same line as that of the former Section. Dr. Ostertag's paper was on "Regulation of the Milk Supply, with Reference to Diseases Transmissible by Milk." He believed that the following requirements were essential to prevent danger from the consumption of milk: (1) That all dairy farms be licensed; (2) that all animals kept for milking be examined by a veterinary surgeon from time to time; (3) that the owners of dairy farms be bound to provide only good undamaged fodder; further, to give immediate notice of the illness of any milch cow to the attending veterinary surgeon, and, until he gives leave, not to send the milk of the diseased animal to market; (4) that the business of milking be performed with the most punctilious cleanliness, and that no person suffering from any infectious illness be employed to milk; (5) that the mixed milk obtained by milking be cooled and stored in special rooms, not in living or sleeping rooms; (6) that it be transported only in suitable vessels; (7) that during the prevalence of aphthæ only boiled milk be brought into the market, whilst all milk which must be considered nauseous or injurious be excluded from the provision market. Likewise, at the outbreak of any epidemic in a house where dairy farming is carried on, the sale of milk be forbidden; (8) in obtaining the so-called "milk for children," especially strict regulations must be carried out as to the feeding of cows, cleanliness in milking, and the cooling and mode of transportation to market.

The time in the Section upon Infancy and Childhood was chiefly occupied with papers and discussions relative to "Neglected Children in Towns and Cities," and "Free Dinners for School Children."

In the Section upon Chemistry and Physics, Dr. Thresh read a paper on the "Chemical and Physical Processes Employed in the Treatment of Sewage." Dr. Carpenter treated of the "Duty of a Locality to Utilize the Nitrogenous Matter in Sewage for the Benefit of the Nation"; he also read a second paper on "The Power of the Soil and Vegetation Combined to Destroy Disease Germs and so Prevent the Possibility of the Spread of Enthetic Disease in Consequence of Sewage Farming."

In the Section on Architecture some excellent ideas were presented in a paper entitled "Some Insanitary Superstitions in House-building." It attacked the method of constructing houses (everywhere prevalent in America) with many air-spaces for the accumulation of dirt and dust between the ceilings, the floors and outer walls. Further papers were read on the Sanitation of Theatres.

In the Engineering Section, Dr. Percy Frankland presented the subject of our "Present Knowledge as to the Self-Purification of Rivers." His conclusions were that the evidence of such purification is wholly inadequate to justify the use of polluted river-water at points below the source of pollution. Other valuable papers were presented on Refuse-Burning and Street-Cleaning. Mr. Jones's paper on the "Refuse Destructor at Ealing" was followed by a visit to the works at that place in the suburbs of London. The process here is combined with the chemical precipitation of sewage. The sludge which is deposited from the sewage being burned together with the garbage collected in the town.

One of the most interesting topics of the third day was the discussion upon Cremation, in the Section on State Hygiene, between Sir Henry Thompson, in favor, and Mr. Seymour Haden, against the practice.

The former claimed the following advantages in support of cremation:

(1) A diseased dead body is rendered incapable of communicating any malady to the living.

(2) The assignment of large and desirable tracts of land throughout the country for the imperfect and sometimes hazardous process of purification by burial in earth is rendered needless. Every acre hitherto thus devoted may in process of time be made free for the production of food; or, in thickly populated neighborhoods, as open spaces for exercise and recreation, may be set apart forever to promote and maintain the public health.

Mr. Haden presented the following propositions:

(1) That the natural destination of all organized bodies that have lived, and that die on the earth's surface, is the earth.

(2) That the evils, which certain theorists would have us believe to be inseparable from the principle of interment, are independent of that principle and of our own creation.

(3) That the source of these evils is to be found, not in the burial of the dead, but in the unreasoning sentiment which prompts us to keep them unburied as long as possi-

ble, and then to bury them in such a way that the earth can have no access to them.

(4) That the principle of burial supposes the resolution of the body by the agency of the earth to which we commit it, and that the earth is competent to effect that resolution, and to effect it innocuously.

(5) That to seek to prevent the beneficent agency of the earth by inclosing the dead in imperishable coffins, brick graves and vaults is in the highest degree irrational, since it engages us in a vain resistance to an inevitable dispensation, and has led us to accumulate in our midst a vast store of human remains in every stage and condition of decay.

(6) That the remedy for such evils is not in cremation, but in a sensible recognition of, and a timely submission to, a well-defined law of nature, and by legislative action to enforce the provisions of that law.

In the discussion which followed, Sir Spencer Wells advocated cremation, and very many took part in the discussion.

In the General Division upon Demography the time was occupied with papers on "India Factory Legislation," "Home Work in Russia," and the "Influence of the Age of Parents on the Vitality of their Children."

The principal work of the Congress practically ended with the sessions of Friday, although the closing meeting was not held till Monday, August 17th.

The attendance on Friday was fully as large as upon any day, the interest in the papers and discussions being kept up till the close. Among the most important papers on that day were one upon "The Improved Hygienic Condition of Maternity Hospitals," in the Section on Preventive Medicine, by Dr. Priestley; and others upon "The Bacteriological Examination of Drinking-water," and upon "Disinfectants," in the Section upon Bacteriology.

In the Section on Diseases of Animals, Dr. Crookshank contributed a paper on "Actinomycosis," which was followed by an interesting discussion by Drs. Ponfick, Nocard, Salmon and others.

The subject of "Block-dwellings for the Working-classes," was presented in the Section on Architecture in its Relation to Hygiene, by Dr. Sykes, in a carefully prepared paper illustrated with diagrams.

Very much interest centred in the discussion in the Section upon State Hygiene, relative to the Compulsory Notification of Infectious Diseases. The new law upon this subject has been vigorously opposed by a very large proportion of the medical profession in England, but the law is gaining ground yearly, and the number of districts which have adopted it is constantly increasing.

Mr. D. Biddle, M.R.C.S., read a paper upon the subject entitled "Should Compulsory Notification be made General?" in which he took the negative side of the question, and adduced a series of tables compiled from the Registrar General's returns in support of his position.

Dr. P. Boobbyer, of Nottingham, presented the opposite view of the subject, and strongly favored the practice. He gave the history of compulsory notification before the Act of 1889; it was in force under local Acts in fifty-nine British towns previous to that year; but in only a small proportion of the towns have all the diseases now on the schedules been included from the outset. He then discussed the theory of various forms and methods of notification tried in different urban districts, the system introduced by the Act of 1889 (dual notification), and the relative merits and demerits of the so-called single and dual systems. Householder notification was necessarily unsatisfactory. He proceeded to the enumeration of the more prominent advantages to be derived from compulsory notification in all places where the sanitary authorities are alive to their obligations and able to enforce the necessary preventive measures. Both with respect to diseases dependent for their propagation upon personal contagion, and to those arising in connection with insanitary conditions, notification simply imparted to the sanitary authorities the information necessary to enable them to exercise those powers with which the earlier Public Health Acts had already invested them. Compulsory notification, and even isolation, were the necessary outcome of evolution as applied to preventive medicine. Allusion was made to the attempt that had been made of late years to discredit notification by the manipulation of statistics, and to some of the errors into which the critics had fallen. Apart from actual error in method or treatment, there were sources of fallacy in the very nature and history of epidemic diseases which rendered the reliable application of statistics to a study of the causes underlying variations in their prevalence and fatality a matter of extreme difficulty. In conclusion, he urged the general application of the system of notification.

That the audience was largely in favor of the views of Dr. Boobbyer was very evident, not only from the discussion which followed, but from the resolutions in favor of compulsory notification, which were carried by a large majority, only five voting against them.

Several interesting papers were read in the General Division on Demography, among which may specially be named that of the President, Mr. Francis Galton upon "Finger-marks as a Means of Personal Identification." Mr. Galton showed the degree of facility by which it is possible to determine whether the duplicate of a submitted set of impressions is or is not contained in a catalogued collection of the finger-prints of different persons, say of criminals. The prints used were those of the bulbs of the ten digits, in each of which a pattern is to be found that is usually isolated by one or two pairs of divergent papillary ridges. The varieties of these patterns, and the method of their formation, were described by him in the Philosophical Transactions of the Royal Society, 1891, where evidence was also given of the persistence, throughout life, in the minutest details of the ridges by which they are formed. In mere size the patterns grow with the individual, and in their proportions they will somewhat vary according to the fatness or leanness, etc., of the finger, but their general character, on the one hand, and their structure in all its minuteness on the other, remains unchanged.

The method consists of two stages: The first is classification according to the general character of the pattern, the second is the scrutiny of all the specimens that are contained in the same class by attending to one or more of the minutiæ. For classification, the method is adopted of regarding only the most obvious differences of character in each of the ten fingers; these are whether the pattern in each of them ranks as a "primary," a "whorl," or as a "loop." No other heads are recognized; the few doubtful cases being classed under one or other of these three heads according to a collection of standard specimens. Every one of these classes is, however, liable to a two-fold subdivision.

There is not space to mention in detail the very many excursions and receptions which were kindly tendered to the Congress, the reception by Her Majesty, the Queen, the various garden parties, the trip to Barking and the lunch on board the *Drummond Castle*, also the special meetings of the Section upon Sanitary Progress in India.

The meetings were brought to a successful close, after a round week of work, by a general meeting in the University of London, on the 17th of August, at which it was voted to accept the invitation of the authorities of Buda-Pesth (Hungary) to meet in that city in 1894.

Out-door Games in Germany. — A course of instruction in out-door games will soon be opened for teachers in Berlin. This is an omen of a better time coming for young people in Germany, where the more or less complete absence of out-door games for young and old is a sad feature in the life of the people. The Emperor is enthusiastically in favor of a change in this direction, and plays football himself with his own sons and Prince Henry at the new palace near Potsdam.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 12, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	747	341	24.57	13.26	14.56	1.17	4.03
Chicago	1,099,850	411	207	30.48	8.16	14.40	7.92	4.80
Philadelphia	1,046,964	365	156	18.48	8.49	7.56	3.92	2.80
Brooklyn	806,343	340	181	21.75	8.12	15.06	1.45	4.35
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	200	84	25.60	13.50	18.50	4.00	1.00
Baltimore	434,439	—	—	—	—	—	—	—
Cincinnati	296,908	103	40	22.31	11.64	13.58	2.91	4.85
Cleveland	262,000	—	—	—	—	—	—	—
New Orleans	242,039	—	—	—	—	—	—	—
Pittsburg	240,000	86	41	33.64	3.48	18.56	4.64	3.48
Milwaukee	240,060	85	53	37.76	5.90	23.60	—	9.44
Washington	230,392	96	36	30.16	15.34	27.04	6.24	5.20
Nashville	76,168	35	14	34.32	11.44	22.88	5.72	—
Charleston	65,165	39	21	12.80	12.80	5.12	—	—
Portland	36,425	12	—	8.33	16.66	—	8.33	—
Worcester	84,655	29	15	34.50	6.90	27.60	—	—
Lowell	77,696	42	27	40.46	11.90	38.68	2.38	—
Fall River	74,398	36	28	8.34	5.56	2.78	—	5.56
Cambridge	70,028	27	10	25.90	7.40	11.11	3.70	7.40
Lynn	55,727	11	3	27.27	9.09	9.09	9.09	—
Lawrence	44,654	20	14	30.00	10.00	20.00	—	5.00
Springfield	44,179	14	6	35.70	7.14	21.42	14.28	—
New Bedford	40,733	15	8	40.00	6.66	40.00	—	—
Salem	38,801	9	3	22.22	22.22	22.22	—	—
Chelsea	27,909	14	10	21.52	7.14	21.52	—	—
Haverhill	27,412	8	3	25.00	—	12.50	—	12.50
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	8	3	37.00	—	37.00	—	—
Gloucester	24,651	11	3	27.27	9.09	27.27	—	—
Newton	24,379	—	—	—	—	—	—	—
Malden	23,031	6	2	—	—	—	—	—
Fitchburg	22,037	9	6	22.22	22.22	22.22	—	—
Waltham	18,707	9	2	—	11.11	—	—	—
Pittsfield	17,281	5	4	60.00	—	60.00	—	—
Quincy	16,723	3	—	33.33	—	33.33	—	—
Newburyport	13,947	3	2	—	—	—	—	—
Medford	11,079	1	—	—	—	—	—	—
Hyde Park	10,193	4	1	—	25.00	—	—	—
Peabody	10,158	4	1	25.00	—	25.00	—	—

Deaths reported 2,807: under five years of age 1,325; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 716, consumption 287, acute lung diseases 172, diarrhœal diseases 419, diphtheria and croup 103, typhoid fever 90, scarlet fever 34, whooping-cough 27, cerebro-spinal meningitis 18, malarial fever 12, measles 8, erysipelas 4, typhus fever (Philadelphia) 1.

From scarlet fever New York 17, Chicago and Pittsburgh 4 each, Philadelphia and Brooklyn 3 each, Cincinnati, Cambridge and Lawrence 1 each. From whooping-cough Philadelphia 9, New York 5, Chicago and Milwaukee 3 each, Boston and Pittsburgh 2 each, Brooklyn, Washington and Charleston 1 each. From cerebro-spinal meningitis New York 6, Chicago 4, Worcester and Fall River 2 each, Philadelphia, Brooklyn, Nashville and Lynn 1 each. From malarial fever New York 6, Brooklyn 3, Charleston 2, Nashville 1. From measles Chicago 2, New York, Philadelphia, Brooklyn, Boston, Milwaukee and Washington 1 each. From erysipelas New York 2, Chicago and Brooklyn 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending September 5th, the death-rate was 16.8. Deaths reported 3,038: acute diseases of the respiratory organs (London) 155, diarrhœa 302, whooping-cough 64, fever 34, diphtheria 34, scarlet fever 27, measles 24.

The death-rates ranged from 11.3 in Nottingham to 27.5 in Preston, Birmingham 15.7, Bradford 15.4, Hull 17.4, Leeds 17.4, Leicester 17.9, Liverpool 21.2, London 16.0, Manchester 16.1, Newcastle-on-Tyne 20.9, Sheffield 17.2, Sunderland 20.3.

In Edinburgh 16.3, Glasgow 19.5, Dublin 18.5.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 12, 1891 TO SEPTEMBER 18, 1891.

A leave of absence granted Surgeon DAVID L. HUNTINGTON, U. S. A., is extended to include September 30, 1891.

The retirement from active service of Colonel EDWARD P. VOLLUM, chief medical purveyor, U. S. A., is announced. S. O., 211, A. G. O., September 11, 1891, Washington, D. C.

Surgeon CHARLES L. HEIZMANN, U. S. A., is relieved from duty at Fort Clark, Tex., and ordered to Fort Douglas, Utah, relieving Surgeon WILLIAM D. WOLVERTON, U. S. A., who, upon being relieved, will proceed to Fort Schuyler, N. Y., and report for duty at that station.

Assistant Surgeon GEO. M. WELLS, U. S. A., relieved from duty at Columbus Barracks, O., and ordered to Fort Thomas, Ky., for temporary duty, relieving Assistant Surgeon Henry I. RAYMOND, U. S. A. Assistant Surgeon Raymond, on being relieved, will report to the commanding officer, Fort Robinson, Neb., for duty at that station.

Assistant Surgeon LOUIS W. CRAMPTON, U. S. A., is relieved from duty at Fort Sheridan, Ill., and ordered for duty at Fort Townsend, Wash., relieving Assistant Surgeon JAMES C. WORTHINGTON, U. S. A. Assistant Surgeon Worthington, on being relieved, is ordered to Fort Thomas, Ky., for duty at that station, relieving Assistant Surgeon GEO. M. WELLS, U. S. A. Assistant Surgeon Wells, on being relieved from temporary duty at Fort Thomas, Ky., is ordered to San Carlos, Ariz., for duty.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 19, 1891.

A. A. HOCHLING, medical inspector, ordered as member of Medical Examining Board.

G. E. H. HARMON, surgeon, ordered to the U. S. S. "Yorktown."

JNO. C. BOYD, surgeon, detached from the U. S. S. "Yorktown," and granted leave.

F. L. DUBOIS, medical director, detached from Navy Yard, Portsmouth, N. H., and wait orders.

J. G. AYERS, surgeon, detached from U. S. S. "Wabash," and to Navy Yard, Portsmouth, N. H.

F. J. B. CORDEIRO, passed assistant surgeon, ordered to the U. S. S. "Wabash."

O. D. NORTON, passed assistant surgeon, ordered to the U. S. S. "Petrel."

E. H. MARSTELLER, passed assistant surgeon, detached from U. S. S. "Petrel," and granted leave.

JNO. H. HALL, surgeon, ordered to appear before Retiring Board.

RECENT DEATHS.

HENRY DYER, M.D., M.M.S.S., died in New York, September 21st, aged eighty-seven. He graduated from Harvard College in the Class of 1826, and from the Medical School in 1829. He practised medicine in Boston for over thirty-five years. Twenty years ago he gave up active practice, and went to New York, where he has since lived.

JAMES WATT, M.D., of Brooklyn, died September 11th, aged forty-seven. For some years he was registrar of vital statistics of the Brooklyn Board of Health, and was one of the first in this country to publish a weekly bulletin of vital data for the use of the profession and sanitary officials.

BOOKS AND PAMPHLETS RECEIVED.

Curability of Consumption. By Charles W. Dulles, M.D. Reprint. 1891.

The Annual Statistics of Manufacturers. 1890. Boston: Public Document No. 15.

Enucleation of the Eyeball. When and How to Operate? By J. Hobert Egbert, A.M., M.D., Ph.D. 1891.

Evidence of Arsenical Poisoning in the Snook-Herr Wedding Guests. By J. W. Irwin, M.D. Reprint. 1891.

Influence of Heredity in Producing Disease and Degeneracy. The Remedy. By Gonzalva C. Smythe, A.M., M.D. Reprint. 1891.

Syllabus of the Obstetrical Lectures in the University of Pennsylvania. By Richard C. Norris, M.D. Second edition. Philadelphia: W. B. Saunders. 1891.

Tables for Doctor and Druggist. Compiled by Eli H. Long, M.D., Professor of Materia Medica, Buffalo College of Pharmacy, etc. Detroit: George S. Davis. 1891.

Three Thousand Questions on Medical Subjects. Arranged for self-examination, with the proper references to standard works. Philadelphia: P. Blakiston, Son & Co. 1891.

Pocket Medical Dictionary, for the use of Students of Medicine. By Ch. Gatchell, M.D., Professor in the University of Michigan. Chicago: Era Publishing Company. 1891.

Therapeutics, Its Principles and Practice. By H. C. Wood, M.D., LL.D. The eighth edition of a Treatise on Therapeutics, rearranged, rewritten and enlarged. Philadelphia: J. B. Lippincott Company. 1891.

Addresses.

THE PRESIDENT'S ADDRESS

At the Opening of the Twelfth Annual Meeting of the American Surgical Association, Washington, September 22, 1891.

By Claudius H. Mastin, M.D., of Mobile, Ala.

Fellows of the American Surgical Association: — At your last meeting in May, 1890, you selected me to be your presiding officer at this session: a session of especial interest, because it is the occasion when the several special associations conjointly assemble to constitute the Congress of American Physicans and Surgeons.

Thoroughly appreciating the importance of the trust and acknowledging the very great honor you have done me, I embrace the first opportunity which has presented, to thank you for this generous manifestation of your confidence and esteem.

It now becomes my pleasing duty to welcome you, together with our distinguished confrères from abroad who have honored us with their presence, to this, the beautiful Capital city of this great, growing and prosperous republic; a city surpassing in beauty and rivaling in grandeur the older and more favored capitals of the old world; noted both at home and abroad for its intellectual and scientific advances, it is to become in the not distant future the centre of the science, the literature and the arts of the Western hemisphere; as it is, even now, the political pivot around which revolves more than sixty millions of freemen! It is here that the Congress of American Physicians and Surgeons holds its triennial sessions, and it is the home of this Association. It is to this and to these that I bid you a thrice hearty welcome!

Since the organization of this Association, a body having for its object the advancement of the science and the art of surgery, a decade has passed away, and with the opening of this session a new epoch in the history of the American Surgical Association begins. It, therefore, is a fitting time to take a retrospective view of our history, to congratulate ourselves upon the auspicious present, and linger for a moment in the contemplation of the future. This I conceive to be a more appropriate theme for the occasion, than for me to weary your patience with a scientific dissertation, especially so since the efficient Committee charged with the preparation of the programme has laid before you a feast rich in this particular.

It was in May, 1879, during the meeting of the American Medical Association, then in session at Atlanta, Georgia, that the founder of this Association called around him a few selected friends, and disclosed to them a plan — which for many years had been a cherished object of his ambition — that of organizing an association which should bear a national name, and embody in one harmonious whole the surgical talent, experience and wisdom of this great country. The question was pertinently asked, "What need is there of such an organization since the country is full of all kinds of medical societies?" It was argued that the surgical section of the American Medical Association offered all the requirements necessary, and that the organization of a special association having for its object the advancement of the science and art of surgery was not called for, and would be looked upon as having for its purpose only the injury of the old Association. Striking, as it were, a direct blow at the surgical section.

With the far-seeing wisdom characteristic of the man, he thought differently, and believed the effect would be directly the opposite. He believed, and said, that the time had come in the history of medical and surgical affairs in America, when such an organization was a necessity, and should be created. He disclaimed then, as we do now, any opposition whatever to the old Association; and he asserted that it was impossible for any new organization to be in the least detrimental to it.

From the day on which the old Association was organized he had been an active and influential member, — once its president, often a contributor to its volume of transactions. Governed by its code of ethics, he remained true and loyal to all its requirements, as evidenced by the fact that when on his death-bed he was asked by a friend what message he desired to send to the American Medical Association, he replied, "Give them my love!" Also, the very last paper he ever wrote was being read in that Association during its session of 1884, on the same day that he died.

It is my honest conviction that neither our illustrious founder, nor any fellow of this Association, has ever entertained any sentiments of opposition to the old Association. On the contrary, as American physicians and surgeons, we feel an honest pride in the work that it has done; and we are the last who would obstruct the progress of an association which is so necessary to the professional interests of the country at large. We are free to admit, however, that we know the time has come in the history of medical affairs in this country when the special branches of the profession must be separately recognized: not that they should be divided into departments having no reliance one upon another, but as integral parts of a great and undivided profession. They should be so organized as to stand "distinct as the billows, yet one as the sea." The Congress of American Physicians and Surgeons is simply a development of this principle!

But he was building even better than he knew. And now, the ten years which have passed so rapidly away have answered the question — "What need is there of such an organization?" The first regular meeting of this Association, held for the transaction of scientific and practical work, took place at Coney Island, in the State of New York, in the September of 1881 — a meeting which was attended by a very small number of its fellows, yet the character of the work which was done was useful, and laid the foundation of the triumphant success which has since been attained.

Nomadic in its beginning, the next meeting was in the city of Philadelphia, on the thirty-first of May, and the first and second days of June in the year 1882. At this session a fellowship of only twenty-five were present; but the work was practical, full of zeal, and showed that the Association was to become in the not distant future an altar upon which would annually be laid valuable contributions to surgical science; and the world said even at that time, its membership was destined soon to become earnest and zealous laborers in the interest of human progress and human suffering.

The third session was called together in the city of Cincinnati, on the thirty-first of May, 1883, and forty fellows all told constituted its full strength. Its first

volume of transactions, which was published after that meeting, attests the amount and the value of the work which was accomplished. Everything then seemed to foreshadow a bright future, and nothing transpired to dim the occasion save the absolute refusal of our beloved founder and president to accept a re-election to office.

That great man, the Nestor of modern American surgery, the founder of, and the cherished idol of this Association, Samuel David Gross, standing without fear and without reproach, held that he had no pre-emption right to office, and contended that he had occupied it long enough. He thought that his re-election would be at variance with the genius of our republican institutions and the habits of the American people. He believed that rotation in office should be the order of the day, not only among politicians but among scientists and professional men. He felt that his highest ambition, as respected this Association, had been accomplished. He appreciated clearly that the work which he began was exceeding his most sanguine expectations and was surely destined to pass into history. We knew that we were losing the guiding hand of a great pilot, and we were loath to permit him to leave the helm of office to serve in the ranks. In the the language of a gifted fellow of this Association, "Had the constitution conferred upon us the power, we would have put on him the royal purple, and hailing him chief among all, have bid him wear it for life." But he was inflexible, and that meeting was the last he ever attended. Those of us who were present on the closing day of that session can never forget the trembling words and tearful eyes when he said: "Now that I am about to retire from the discharge of these duties, I feel sure that the interests of the Association will be perfectly safe in your hands, and in the hands of my distinguished successor. I have no greater ambition than to live in your affection and esteem, and to witness the ever-increasing prosperity of this Association; its success is closely associated with the remainder of my life. I believe that we have an association which is destined to become a power for good in the land; and when I am dead and gone, you will not, I am sure, relax in your efforts to make it what its founder intended it should be — a great and lasting institution. God bless you, gentlemen, in all the relations of life and may you ever be faithful to the interests of the profession and the code of ethics in connection with which we have carried on our work."

Gentlemen, these were the farewell words of an old patriarch to his children, and they should sink deep into your memories; for they were spoken by a truly great man, one of those who are "born beneath the aspect of a bright-eyed star, and whose triumphant adamant of soul is but the fixed persuasion of success." In less than one short year from that day he rounded up his great life, and rested.

The future was before us, when from Cincinnati the Association took a new departure; and under the leadership of that venerable and gifted surgeon, Edward Mott Moore, we next assembled here in the city of Washington on the thirtieth day of April, 1884. From that time it can truly be said, "we have had a local habitation and a name." Time does not permit me to enter into the details of our annual sessions which have been held in the city each spring, nor to mention the interest and enthusiasm of our fellows which have made these reunions so pleasant and instructive as they have been. Suffice it to say, our successive and successful meetings from then till now, under the guiding hands of Moore and Briggs, and Gunn and McGuire, Agnew, Cheever and Yandell, have gradually passed from small beginnings to the present prosperous and renowned Association which has assembled here to-day.

When this Association was first organized, anæsthesia had but enlarged the domain of surgery: to-day antisepsis followed by asepsis have emboldened the surgeon to undertake and perform operations hitherto deemed impossible. Whilst anæsthesia had measurably lessened shock, antisepsis and asepsis have gone a step beyond, and done much toward the prevention of septic results, thus making the possibilities of surgery even greater.

In the last decade, the rapid and steady advances of the chirurgic art have far outstripped all other departments of the profession; and with the constant and seemingly never-ending improvements now going on in all the branches, — the discoveries in chemistry, with the consequent additions to our materia medica; the revelations by the microscope, leading to a proper understanding of pathological lesions, and the clearing up of doubtful points in physiology, together with many new precisions in the study of all the branches of medicine, — have enlarged the vista before us, so that no one can predict the limitations which may not be reached in the next ten years. It was but yesterday when the closed cavities of the body were held as sacred. The organs within the abdomen, the lungs and heart within the thorax, the brain and spinal cord cased by the skull and vertebral column, were each surrounded by a dead-line which none dared to cross. To-day, they have each become the legitimate field into which the surgeon has carried his knife.

The old world and the new world, shoulder to shoulder, have been busily engaged in blazing out the pathway from art to science. If our friends from abroad should ask what has been doing here in America, and what hand this Association has taken in the good work, I could tell them, if it would not be considered invidious for me to use names, what our fellows have been doing in abdominal surgery, — their operations upon all the organs contained in the abdomen, their improvements in the treatment of gunshot and other wounds of the intestines, their work done in the thorax, — and show them that the brilliant achievements of Horsley, Godlee, Macewen and others across the Atlantic, in brain surgery, have been reproduced here with equal success. Even were it proper to do so, time will not permit me to enter into the details of the brilliant work which has been successfully done by the fellows of this Association in all the regions of the body, both external and internal. Suffice it to say, American surgeons have not been idle nor non-progressive, and their work has been placed on record.

Whilst this Association has been advancing the cause of surgery, and doing much to alleviate the distress of suffering humanity, it is sad to have to relate that death has been busy in our ranks, and that some of our best and most eminent fellows, even in the midst of their labors and the height of their usefulness, have fallen in his harvest and been gathered to their fathers. Their loss has proved a serious and irreparable one to the Association no less than to the country.

Since our organization we have been called to mourn

the loss of twenty-one of our brothers, among whom we chronicle the death of two ex-presidents, four ex-vice-presidents, four members of the council and seven of our honorary fellows. Only a very small number have resigned; while, on the other hand, the applications for membership have vastly exceeded the number of admissions.

It is indeed gratifying to know that those who have fallen from our midst were earnest and zealous laborers in the cause of surgery, and enthusiastic in their efforts to advance the best interests of this Association.

Now, when we pause to drop a tear of sympathy and sorrow upon the green sward which covers them, we are solaced with the recollection of their many virtues and the assurance that, although they have passed to the great majority, they had reached eminence in their profession, and left behind them records of well-spent and useful lives. They live honored in our memories.

It is proper to mention that much of the success of this Association has been due to the indefatigable labors of our efficient secretary, who, from the date of our organization to the present time, has been distinguished for the unwearying and unselfish zeal which he has shown in the duties of his office; and he deserves the highest commendation for the work which he has accomplished. No less are we indebted to the recorder of the Association for his labors; for to him especially is due the editing and publication of the beautiful volumes of transactions which have followed our annual meetings. Lastly, though not least, all praise should be accorded to the fellows themselves, for their zealous co-operation in all the labors of our annual sessions, and their successful endeavors to make the Association what its founders intended it should be, a great and lasting institution.

During the ten years which have passed so rapidly away, it will be observed that the Association has steadily advanced in prosperity and usefulness, winning for itself an honorable station among the learned societies of the country, and claiming the admiration of those of the old world. Its volumes of yearly transactions are replete with valuable scientific productions worthy of their authors, and honorable alike to the Association and the nation. Its membership comprises the leading surgical talent of the land, and has fostered an *esprit du corps* such as is to be found only among refined and agreeable gentlemen.

Bound together as we have been for ten years, new acquaintances have been made, and they have ripened into friendships, old ones have been renewed and cemented, and to-day the American Surgical Association stands before the world a united brotherhood inspired with one sentiment, that of doing good to suffering humanity and advancing that department of the healing art to which they have consecrated their lives.

In this connection, a justifiable pride compels me thus publicly to say: From the day of our organization to the present hour, in all our public and private relations, in our intercourse with each other, in our scientific discussions and social reunions, there has not been one single occurrence, one harsh word, to mar the harmony of the occasion or disturb the friendship of its fellows. Verily, this is a record strange and unusual in the history of medical associations, and deserves more than a passing notice.

Such, in brief, is the outline of our past, and whilst we have every cause to congratulate ourselves upon the successful termination of the decade we are leaving behind, it is still necessary that we should comprehend the importance of the trust which has been placed in our keeping by the founders of the Association. Holding in our hands its spotless record, it is a happy privilege to be able to feel that we desire its history hereafter to be but a just development of that which has gone before; so that the ever-opening pages of its future may continue to be lighted, as they now are, by a bright reflection from its past. Now let us here to-day join hands around this family altar, and renew our vows to make her still greater than she is.

Before closing, I beg to be permitted to make a few suggestions, which I trust will not be taken in the light of criticism of the past management of the Association: First, I suggest that a business committee be provided, whose duty shall consist in the preparation for and arrangement of the scientific work of the meetings. Such a committee duly authorized would relieve the president and secretary of much labor and responsibility, and the work which they would accomplish would better serve the interests of the Association than if left to the will and pleasure of the presiding officer.

At the session of 1886, a resolution having this end in view was offered as an amendment to the By-laws and under the rule was laid over for one year; it, however, failed to secure the approval of the fellows at the session of 1887, and was finally tabled. I now recommend that proper action be had to the effect that the resolution of 1886 be taken from the table and passed; so that the By-laws will require a committee composed of the president of the Association, its secretary and the recorder, together with the two senior members of the council, to take charge of the preparation of the scientific work of the Association. Their duties should be to select such subjects for the regular essays as they deem best, and have the appointment of those fellows to lead in the discussions of these papers as in their judgment they believe will serve the best interests of the meetings. It should be fully understood, however, that all volunteer papers be left to the option of the fellows without the interference or control of the committee.

Although there has not been as yet any constitutional provision for such a committee, still we have had during the present session and the one immediately preceding it, the benefit of an unofficial committee which has been of vast service in the organization of the meetings, and I now take this opportunity to acknowledge my own indebtedness to them for the very valuable assistance which they have rendered to me in preparing the work of the present session.

Second, I suggest that our present limit of fellowship be increased from one hundred to one hundred and fifty. I am induced to make this suggestion entirely in view of the vast extent of our country, and the large number of young surgeons throughout its wide domain, who are rapidly rising to eminence in their chosen branch. When this Association was first organized, it was then the part of wisdom that our restrictions should be limited, and our membership confined to a small select body of workers. Now the situation is different, and having passed the stage of adolescence we are prepared to extend our field of operations, and in doing so it is but proper that we should remove the obstruction of exclusiveness. With our present limit of membership we are arrogating to

ourselves too much when we claim to be the representative body of American surgeons.

In this I do not desire to be misunderstood, because I would urge that all due vigilance be exercised in the admission of new fellows; the present high standing of the Association must be preserved. Age, scientific attainments, with surgical experience and general culture, should be the necessary prerequisites for admission.

We have set up for ourselves a high standard and we can maintain it only by guarding our portals against unworthy applicants. Besides protecting ourselves, we must remember that each one of the conjoint Association is in honor bound to stand sentinel at the doors of the Congress, and as membership in that body can only be had by virtue of fellowship in one or another of the special societies, it is a duty which each one owes to the other to protect the purity of the confederation.

It should be our aim and attainment to make the Association the representative body of surgical science in America, and to accomplish this most desirable end "genuine ability and solid work must be the indispensable qualifications for admission; and continued scientific activity, the recognized duty of membership." With such a standard before the world, it will soon become a high and coveted honor to be known as a fellow of the American Surgical Association.

Now leaving the larger views I have expressed, for a subject which should be nearer and dearer to us all, though not on that account a narrower sentiment, I ask your indulgence only a few moments longer.

It is well known to the world at large, no less than to the profession of which he was an honored member, that Dr. Samuel David Gross stood first in the foremost rank in his chosen branch of the profession, and that the high position to which American surgery has attained all over the world is largely due to his example and his teachings.

Since he has passed away and his life-work gone into history, we fully appreciate his real worth. And, therefore, it is his friends and admirers who have been inspired to erect a monument to his memory, such a monument as will bear testimony of their gratitude and be in the future an incentive to those who are to come after us to like noble deeds. To further this praiseworthy enterprise, I suggest that a committee from this Association be appointed to confer with the friends and admirers of Dr. Gross and with the medical profession of the whole country to determine the best method to be adopted to secure the requisite amount for the erection of a monument either of marble or of bronze.

Such tributes to the memory of distinguished men are common both in this country and abroad. And when in our own profession a man is found who has done so much to adorn it, it is meet that we should show to the world our appreciation of his work.

Dr. Gross was probably more widely known and appreciated than any American surgeon of recent years, and when we remember that thousands of his pupils scattered throughout the whole of America, men who sat under his teaching and who still retain of him the warmest memories, it is not expecting too much when we feel assured of their coöperation in raising speedily and without difficulty the requisite amount for the completion of such a monument.

I do not suggest that this work be done by the Association exclusively, nor would I advise it if it could be. I would prefer to see it done by the profession of the entire country, because Dr. Gross belonged to no exclusive faction, but was a member of the profession at large. It is proper, however, that this Association take the initiative in beginning the monument, and I feel assured that there will not be the least doubt as to the successful issue of the undertaking.

If any man in our profession has merited such a tribute, surely Dr. Gross was most eminently entitled to it, for he was a man "animated by fervent attachment to the science and practice of his profession, and it was the duty of his life to augment and exemplify the resources of surgery, and by most assiduous and successful application of his time and his talents, his name has become known and honored, not only in his own country, but in every land."

Appreciated and honored as he has been in life, let us now, since he is dead, build to his memory such a monument as will bear witness in after years to the estimate in which the profession of to-day holds its distinguished members.

If it were asked of me where such a statute should be erected, I would answer, not at Easton, in the State of Pennsylvania, the place of his birth; neither at Cincinnati nor Louisville, where he laid the foundations of his future greatness; nor even in the city of Philadelphia, where that greatness culminated in all its grandeur; but here in the city of Washington, the Capital of the country, which claims him as her own. His name and fame are a sacred heritage to the country at large and to the profession he loved so well. Then, here in this beautiful city, amid these verdant parks, and hard by these massive piles of classic architecture, let us place it. Place it among these statutes, emblems of a nation's gratitude to her illustrious dead, her statesmen, her warriors, her jurists, her philosophers. Build it here, so that in the ages to come, when the youth of the land make their pilgrimages hither, they will behold the monument which their forefathers reared to commemorate the life and character of her greatest surgeon. It will teach them to emulate his example.

Thanking you for your kind attention, we shall now proceed with the regular business of the Association.

THE PRESIDENT'S ADDRESS

AT THE OPENING OF THE FIFTEENTH ANNUAL MEETING OF THE AMERICAN ASSOCIATION OF DERMATOLOGY, WASHINGTON, SEPT. 22, 1891.

BY F. B. GREENOUGH, M.D., OF BOSTON.

GENTLEMEN AND FELLOW-MEMBERS OF THE AMERICAN DERMATOLOGICAL ASSOCIATION: — I have the honor to open this, the Fifteenth Annual Meeting of our Association and the second held here in Washington, conjointly with the Association of American Physicians and Surgeons; and it is with great pleasure that I am able to congratulate you on coming together under such auspicious circumstances. Inasmuch as we have a very full and important programme to listen to and discuss, this morning, and as it is, if I may be allowed the expression, our tin wedding, I have thought it best to vary from the precedent of my predecessors in giving an elaborate address on the subject of the progress of dermatology during

the past year, and instead, give you a brief synopsis of what the Association has done since its start, fifteen years ago.

The American Dermatological Association was conceived in July, 1876, by the following call, which was sent to fifty, more or less, physicians who were known, or supposed, to take a special interest in this subject.

"Dear Sir: — At an informal meeting of the undersigned, held in Philadelphia, at the rooms of the Section of Practical Medicine of the American Medical Association, on Wednesday, June 7, 1876, after the election of a chairman and secretary, *pro tem*, it was resolved to call upon such American physicians as had evinced a special interest in Dermatology, to unite in forming an American Dermatological Association."

It was also resolved that the meeting for organization should take place on September 6, 1876, at the University of Pennsylvania, Philadelphia, at 6 P. M., or immediately after the close of the meeting of the Section of Dermatology and Syphilology, of the International Congress held on that day. This call was signed by Drs. Bulkley (Secretary *pro tem*) and Fox, of New York; Wigglesworth (Chairman *pro tem*), of Boston; Atkinson, of Baltimore; Yandell, of Louisville; and Duhring, of Philadelphia.

At the meeting called for September 6, 1876, the following gentlemen were present: Drs. Atkinson and Brown, of Baltimore; Bulkley, Heitzman, Keyes, Piffard, Taylor and Weisse, of New York; Duhring and Van Harlingen, of Philadelphia; Busey, of Washington; Octerlony, of Louisville; and White and Wigglesworth, of Boston; fourteen in all. A Constitution and By-laws were proposed and adopted, and the following officers were elected: President, Dr. White; Vice-Presidents, Drs. Duhring and Taylor; Secretary, Dr. Bulkley; Treasurer, Dr. Hyde. Twenty-three physicians having responded to the call, they, in addition to the six signers of it, in all twenty-nine, were declared to be members of the Association, and the meeting was adjourned to hold its first annual meeting at Niagara Falls, on the first Tuesday of September, 1877. On which date the Association met, with Dr. White in the chair. There were fourteen members present, and fourteen papers were read and discussed, as well as four by title. The President opened the meeting by an address, the title of which was, "A Review of the Progress of Dermatology in America for the past Twenty-five Years, and the Gradual Recognition of the Branch in the Colleges of the Country."

The second annual meeting was held at Saratoga, August 27–29, 1878, Dr. White presiding. Ten members were present, and eleven papers were read.

The third annual meeting was held in New York, in August, 1879, Dr. Duhring in the chair. Thirteen members attended, and the President opened the meeting with an address on "The Rise of American Dermatology." Fifteen papers were read. A feature of this meeting was that on the afternoon of the last day, the Association met at the New York Hospital for a clinical inspection of cases.

The fourth meeting was held at Newport, R. I., August 31 to September 2, 1880, under Dr. Duhring's presidency. Ten members were present, and eight papers were read.

The fifth meeting was held at the same place, August 30 to September 1st, 1881, Dr. Hyde being in the chair. Eight members were present. The President read an address on "Dermatology and its Relations to Periodical Literature." Ten papers were read. This was the first meeting of the Association at which I had the pleasure of being present, and I never shall forget it. According to the records there were only eight of us present, and we met in a little room up-stairs in the Ocean House, a very different locale from what we have had since, but there was much that was interesting given to us. The subject of Leprosy was quite prominently brought up: Dr. Atkinson reading a paper on "Tubercular Leprosy," Dr. Hyde one on "Acute Tubercular Leprosy," and also one by Dr. H. D. Schmidt, of New Orleans, on the "Pathology of Leprosy." Dr. Atkinson also showed a microscopic specimen of the bacillus of leprosy, which was, I think, one of the first specimens demonstrated on this side of the water.

The sixth meeting was held also at Newport, Dr. Hyde, president, on August 30 to September 1, 1882. Eleven members were present, and four papers were read.

On August 29–31, 1883, the seventh annual meeting was held at Lake George, Dr. Taylor presiding. Thirteen members were present, and seventeen papers were read.

The eighth meeting was at Highland Villa, Highland Falls, near West Point, last of August, 1884, President, Dr. Taylor. Eleven members present, eight papers read.

On the 26th, 27th and 28th of August, 1885, the ninth annual meeting was held at the Indian Harbor Hotel, Greenwich, Conn., Dr. Hardaway, presiding. There were nineteen members present and twenty papers were read. This was a most successful meeting, not only as far as the scientific work went, but the situation was charming and the weather perfect and the members enjoyed their spare hours in rides and walks in the woods and along the shores of the sound.

The tenth annual meeting was held in August, 1886, at the same place, Dr. Wigglesworth as president, opening it with an address. Nine members were present and nineteen papers read. It was at this meeting that the first steps were taken towards the Association joining with other special organizations to form an American Congress of Physicians and Surgeons. The subject was brought up by a motion by Dr. Piffard to the effect that the Association issue a call for an International Dermatological Congress to be held the following year, that is, 1887. The President read a communication, received from Dr. Erving Means, Secretary of the American Surgical Association, with regard to the proposed formation of an association, to be entitled, Congress of American Physicians and Surgeons and to be composed of the various special societies. After discussion it was finally voted, that the incoming officers serve as a committee to carry out these suggestions and to report at the next meeting.

This next meeting, the eleventh, was held in Baltimore in 1887, in the hall of the State Medical and Chirurgical Society, Dr. Piffard in the chair. Seventeen members present, and thirteen papers read. A feature of this meeting was the presence of Dr. Unna, of Hamburg, who, besides taking an interest in the communications and discussions, gave a verbal report on his treatment of leprosy. The council having reported favorably on the suggestions contained in the circular received from the American Surgical Association, the President, Dr. Piffard and the Secretary, Dr. Tilden,

having been present at the meeting held in Washington, September 24, 1886, it was voted that the report be accepted and the incoming President, Dr. Atkinson and the Secretary, Dr. Tilden, were appointed delegate and alternate, respectively, to the executive committee of the Congress.

On September 18–20, 1888, the twelfth annual meeting and first conjoint one, was held at Willard's Hotel, Washington, Dr. Atkinson presiding. Eighteen members were present, and sixteen papers were read, besides the President's opening address.

The thirteenth meeting was held in Boston, in the hall of the Medical Library Association, in September, 1889, Dr. Graham, president, who read an address, after which seventeen papers were read and discussed. A case of prurigo was shown, and called forth a very interesting discussion.

Last year, in the early part of September, the fourteenth meeting took place under the presidency of Dr. Morrow, at the new Bath-House, Richfield Springs. Sixteen members attended, and, after the President's address, fourteen papers were read. The meeting was a very successful one, the members having enjoyed the natural advantages of the place, and been interested in the communication made by Dr. Ransom (director of baths) on the subject of the use of the water in skin diseases. The Association adjoined, to meet in Washington in September, 1891, in conjoint session with the American Association of Physicians and Surgeons.

Such, gentlemen, is the record of our meetings during the past fifteen years, condensed as much as I have been able to do it. In looking over these records, there are many points that are interesting and instructive, but I will only detain you to refer to one. The Association started with a nominal membership of twenty-nine. Some of these members never qualified, others have resigned and dropped out; but to-day, or rather at the time the Transactions for 1890 were published, our membership was thirty-four. This means that we have had the honor and pleasure of having new members join us, who are interested in the same subject that we are. A most superficial running over of our records cannot fail to draw one's attention to the fact, that during the past fifteen years certain names appear constantly as attending, reading papers, and in discussions, and certainly all honor should be given to them for the interest they have taken in our Association and the work they have done. But, gentlemen, fifteen years added on to the life of a man between the ages of thirty and forty is a long period of time, and I trust that our comparatively new members will follow in the footsteps of the older ones, and do all in their power to carry on our Association successfully.

It is not only in a scientific sense that we have accomplished something. The meeting of members interested in the same subject from all parts of the country has been productive of friendship, and pleasant personal relations between men who otherwise would know each other only by name. I think we can congratulate ourselves, on the whole, on our harmonious meetings, and absence of the rivalry and competition which even professional men are not exempt from. As a matter of course we differ in our ideas on many points; and it is this very fact that gives a great value to our meetings, where we can discuss our differences, and have our angles smoothed down by contact with others. If everybody thought alike, this world would be a very stupid one to live in, and all progress and advancement in knowledge and science would cease.

THE PRESIDENT'S ADDRESS

Delivered before the American Pediatric Society, Washington, Sept. 22, 1891.

by T. M. Rotch, M.D., of Boston.

Gentlemen, Fellow-members of the American Pediatric Society: — Three years have passed by since in this very city we crystallized into being and became an entity. Again we gather together to emphasize our individuality as a recognized Society. Now, however, as a part of a national organization, ourselves national in every sense of the word, with our members enrolled from the shores of the Pacific, from the South, from what was formerly the West, now the great centre of our Commonwealth, from the Atlantic coast, and then stretching still farther to the North, from our sister country Canada.

I bid you welcome to our National Capital! I congratulate you on the progress which every year is being made in the study of a most interesting as well as important branch of Medical Science; in the branch which is to help make the people of the future in our great Republic worthy of the responsibilities which such a Republic brings with it; which is to make our American citizens both physically and mentally, year by year, decade by decade, superior to their forefathers, and thus enable them to develop their country and its vast resources; thus make her stand shoulder to shoulder, neck to neck, in the race for supremacy which is going on all the world over. A young country in comparison with our medical competitors in the old world, well fitting is it that our Society should devote itself to a subject essentially young not only in years, but young in the knowledge which up to the present time has been acquired concerning it. So much less has been done in the proper and scientific study of children than at other periods of life, that it is no wonder we have entered upon the especial investigation of and research in this branch of anthropology, with the keen interest of explorers in an almost unknown country. Of still further interest, also, when we discover not only that there is a vast expanse of unknown, but that much which was supposed to be known is, in reality, a poor subterfuge of unreal facts forming structures of misleading results, which in the scientific medicine of adults would not for a second be tolerated: in fact, would be laughed to scorn as relics of the dark ages of necromancy. This same misnamed medical knowledge, however, when representing the infant and child, has been accepted with but little question. What our Society was needed for, what it was formed for, what it intends to do, is to place the study of Pediatrics on the same elevated plane that has been established for the diseases of adult life.

To accomplish this, it must in the early years of its existence be iconoclastic. It must break down and sweep away these misleading structures; clear the ground of these undesirable remnants of the past; get down to the virgin soil, and then by original research build up our new fabric on a stable basis.

Wise Iconoclasm and Patient Originality must be the weapons by which we shall fight our way to the

front and place the standard of Pediatrics where it ought to be. Place it side by side with the already perfected anatomical and physiological investigations, which have become the true basis for the enlightened clinical study of human beings.

To intelligently understand the fully-developed man in health and disease, it seems self-evident that the anatomy and physiology not only of the final state of growth should be studied, but also that the various stages of development, from embryo to infant, and infant to child, and child to adult, should successively be dealt with. This in the past, however, has been but little done. On the contrary, the very opposite method has been adopted; the most careful attention being paid to adult anatomy and physiology, and then deductions made backward from adult to child; a retrograde means of acquiring knowledge which has proved eminently unsuccessful.

In the old world as well as in the new we find that these false methods have been pursued. What little has by more rational methods of study been accomplished in the investigation of infants and children, has as large a place in America as in Europe. Here, then, is our opportunity for original research, for we have a branch of medicine which universally is new.

We have the same advantages in clinical material, in well equipped laboratories, in special hospitals as are to be found anywhere. Let us be sure that we give as much if not more to the savants of Europe as we receive from them.

As I look upon the members of our Pediatric Society and see how well fitted they are to be leaders in the several communities wherein their lot is cast, it is impressed upon me that, when meeting as a whole, our Society should represent advanced and general ideas; should deal with living questions of the day; and, that the results of our deliberations should authoritatively be promulgated by our individual representatives far and wide throughout our whole country.

Thus only can the unenlightened influence of the profession at large on the laity be curbed in the harm which it is continually doing to scientific medicine; thus only can the self-sufficient ignorance regarding the most critical period of human existence be properly combated, and the general physician be forced to understand that he has but a limited knowledge of what he has been in the habit of considering simple questions; of what he has been accustomed to give offhand opinions and advice on, to the credulous mother of the suffering child.

You probably all have met with the same experience as mine, not only among the poorer class of physicians, but, astonishing as it still seems to me, among the highly educated and distinguished members of our profession.

Among men who are recognized leaders; men who have done much for humanity in other branches of medicine, and yet with dignified authority continue to utter dead platitudes concerning children — platitudes which have been handed down from their forefathers or copied from the already cumbersome literature of Pediatrics and again enunciated by themselves in their own writings.

It is no exaggeration to state that a large number of sick infants and young children throughout the land are suffering from the vigorous treatment of their zealous medical attendants, rather than from the disease with which they started. This should be stopped. This it is the mission of our own Society to put an end to.

I ask you to carefully consider this vital question. I ask you to attack it with Iconoclasm and Original Thought, for I assure you it will repay you, by opening up vast fields of intensely interesting brain work.

It is not difficult to pick out instance after instance of the truth of what I have just said. The therapeutics of infancy and childhood, as understood by thousands of practitioners in Germany and France, in England and in America, is a wonderful exhibition of what vagaries the human mind, sound on other subjects, can be induced to indulge in. A total disregard of natural processes; an over-exaggeration of symptoms, which in the adult mean danger and require active treatment, while in the child, they are but simple and harmless manifestations of an over-excited nervous system. Such is the "Ignis Fatuus," so misleading, not only to those who have not especially studied the early stages of life, but also to those who have seen much of it, but with eyes blinded by traditions of the past. It would seem as though in this age of rapid discovery, of quick change and interchange of ideas — in an age when the precision of our investigators in all branches of research has almost placed the much abused profession of medicine on a level with the exact sciences — it would seem, I say, that we, who are endeavoring to place our especial branch of study on firmer ground, should consider with unusual care the opinions which we express to the profession at large and to the laity; that our writings should be founded on principles as accurate as the science of the day can make them. This, however, in the past has been but little done, and consequently we have amassed volumes of most unreliable pediatric literature. I honestly believe that there is reason for saying this. I truly think that it is one of the vital living questions of the day which we should appreciate and grapple with.

What we need to aid us in this reform, for a reform it must be in every sense of the word, is a fitting humility as to the degree of our knowledge; a proper sense of how small has been the true working capital which we have had at our command in the study of Pediatrics.

We must confess, and by so doing we certainly add new strength to our writings, that the medical science of the present day is too vast for one mind to master as a whole; for one man to attempt to be an expert in.

We must make use of the experts in their several branches, whether it be chemistry or physiology, anatomy or bacteriology, to strengthen and make stable our general deductions as clinical investigators. In this way only can we, in an age essentially one of progress in details, prepare ourselves to produce work of true original thought, of real intrinsic value.

Work which, with its lustre of matured and well proved thought, spreading far into the future, will be deemed worthy to be placed with the other records of a lasting literature.

The literature of a society gives evidence of the work which has been done by its members long after their individual labors have ceased and their places have been filled by a younger generation. If that literature is well considered and shows evidence of representing not the hasty judgment of the day, but of being built on the broad foundation of exact science, it will be worthy of the study of our descendants. As a sound unquestioned nucleus, it will give encourage-

ment to broaden the field of inquiry and to add fresh knowledge year by year.

Let us then see that the circumference of our literary circle, small as it now is, shall spread wider and wider, honestly fitting itself for the far-outstretching eternal criticism which will judge our work long ages after we are dead and gone.

Let us leave to the coming ages a fitting centre for that scientific, human, eternal progress spoken of in the old hymn which says,

> "Eternity, Eternity!
> How long art thou, Eternity!
> A ring whose orbit still extends,
> And ne'er beginning, never ends,
> *Always* thy centre, ring immense,
> And *never* thy circumference,
> Mark well, O man, Eternity!"

It should be our aim that a lasting literature of this kind, ever young and fresh in the truths which it enunciates, ever presenting a solid centre for more extended investigations, should emanate from members of our own Society.

Again then, let us see that what we write, that what we publish, not only in our transactions, but in our books and in the medical journals of the day, shall form volumes worthy of the admiration, and not of the derision of our successors. Let our books so teem with unquestioned truths, with pages recording facts and finding no place for theories, that on their face they will prove the truth, and not the fallacy of the lines, which in the present age of unbridled literature might well be questioned; lines which read:

> "Give books: they live when you are dead;
> Light on the darkened mind they shed:
> Good seed they sow from age to age,
> Through all this mortal pilgrimage.
> They nurse the germ of holy trust;
> They wake untired when you are dust."

Original Articles.

THE CONDITION AND PROSPECTS OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE, AND ITS INDEX CATALOGUE.[1]

BY JOHN S. BILLINGS, M.D., *Surgeon United States Army.*

Of late years those physicians in this country who make use of medical literature in connection with their investigations or writings, have, for the most part, become acquainted with the resources of the "Library of the Surgeon-General's Office," as it is officially designated, and many of them are much interested in its progress and prospects. I am often asked how the collection is progressing, how near it is to completion, what it is most in need of, when the "Index Catalogue" will be done, whether it will be followed by a supplement, whether there is danger that the work of the library may be checked in the future through changes in administration, and so on.

These manifestations of interest are, of course, very gratifying, and when the Chairman of your Programme Committee demanded a ten-minute paper from me on this occasion, it occurred to me that I would try to answer some of the foregoing questions so far as I am able to do so.

The present condition of the library is fairly satisfactory. It now contains 102,000 volumes and 152,000 pamphlets, counting as pamphlets all octavos and smaller sizes having less than 100 pages, and all quartos of less than 50 pages. During the last five years, that is, from July 1, 1886, to June 30, 1891, the additions to it have included 25,237 volumes and 55,900 pamphlets, or an average of 5,000 volumes and nearly 12,000 pamphlets yearly. Of this annual increase, about 2,000 volumes and 4,000 pamphlets have been of new or current literature, and the remainder have been publications of previous years or centuries. About one-fifth of these accessions, of both new and old literature, have been presented, the remainder have been purchased. So far as mere size goes, it is the largest collection of medical literature in the world, and for the last five years has been increasing more rapidly than any other similar library containing 25,000 volumes and upward. It is especially rich in medical periodicals and transactions of societies, of which classes it now contains about 34,350 volumes. The American, English, French and German literature in all branches of medicine which has appeared during the present century is very fully represented, and over 90 per cent. of all the medical literature of the world for the last ten years is in the library. The whole is conveniently arranged in a fireproof building, and is catalogued.

So much for the favorable side of the situation; now for a statement of some of the principal defects and deficiencies. Of medical incunabulæ, it contains 140 volumes, or about one-eighth of the medical works published prior to 1500. Of the published works of the ancient Greek, Roman, Arab and Hebrew medical authors, it has one or more editions of nearly all, but these editions are not in every instance the best. Of the early Spanish and Portugese medical literature, it has almost nothing; of French medical works of the sixteenth century, but little; of French medical theses prior to 1800, very few. Of the English, French and German medical books of the sixteenth, seventeenth, and eighteenth centuries, which are of any importance historically or practically, it has about 75 per cent.; of the Italian, about 50 per cent.; and of Spanish, about 25 per cent. In its periodical literature it is especially deficient in the Spanish and Italian prior to about 1850, in the French prior to 1780, and in the Russian prior to 1860. If I could add to it about ten thousand volumes of my own selection, it would, I think, contain at least one edition of every medical work of any practical use or importance which has ever been published, although it would still not possess some 50,000 pamphlets and theses, each of which might be of some historical interest.

These deficiencies in the library are being gradually supplied, but the acquisition of the older books and pamphlets which are still wanted is becoming every year a slower, more difficult, and more costly process. This is due to the fact that the books still wanted are many of them rare, and only appear in the market at intervals of from five to fifty years; to the fact that the number of competitors for such books is increasing, and, above all, to the fact that the expenditure of time required for the examination of the numerous catalogues and lists received at the library in order to select those books which are still wanted is becoming very great in proportion to the results obtained. To check off a catalogue of a thousand medical books with the result of finding about four which are really

[1] Read before the Association of American Physicians, at its Sixth Annual Session, Washington, September 25, 1891.

desirable, a dozen which may be accepted as filling gaps, and about twenty small theses which are not in the collection, involves an amount of clerical work which costs as much as, if not more than, the books thus obtained. In one sense, it is true that this is a satisfactory condition for a library to be in, but, nevertheless, the time spent in such checking is to be regretted.

With regard to current medical literature, the amount increases each year, but the rate of increase is becoming slower. Comparing the period of 1890 with that of 1880, we find that the number of medical writers increased from 11,600 to about 14,200, or a little over 22 per cent. There were published in 1890 about 2,000 volumes and 4,000 theses, pamphlets, and reports in medical literature. Of the volumes, about 930, or not quite half, were furnished by medical journals and transactions, as against 864 of the same kind in 1880 — being an increase of about 7½ per cent. Excluding the journals, transactions, and theses, the number of medical books and pamphlets published in 1890 was about 1,850 as against 1,600 in 1880 — being an increase of about 15½ per cent. This indicates that the increase in the number of medical writers, and in the quantity of medical literature which they have produced, has not been proportionally as great as the increase in population and in the number of physicians in civilized countries during the decade, which confirms the statement which I made ten years ago, that the rate of increase is becoming smaller.

In the United States the proportion of periodical literature to the whole is much greater than it is in other countries — for in 1890 it produced about 250 volumes of medical periodicals, 60 volumes of new medical books, 20 volumes of later editions, and 28 volumes of reprints of English books and transactions; while France produced about 160 volumes of medical periodicals, 250 volumes of new medical books, 20 volumes of later editions, and 15 volumes of transactions; Great Britain about 85 volumes of periodicals, 140 new books, 45 volumes of later editions, and 12 volumes of transactions; and Germany about 175 volumes of medical periodicals, 175 volumes of new books, 80 volumes of later editions, and a dozen volumes of transactions. All this is exclusive of pamphlets. Of course, quantity in medical literature has no definite relations with quality or value, but I am speaking now merely with reference to the number of separate pieces which are to be obtained, catalogued, and cared for, and you will see that including journals, transactions, reports, books, pamphlets, reprints, and theses, we shall have at least 6,000 new pieces to provide for this year. The indexing of articles in journals and transactions will involve the writing and classifying of about 25,000 titles in addition.

Of the "Index Catalogue" of the library, twelve volumes have now been printed — carrying the work to S. The thirteenth volume is nearly ready for the press, and the manuscript for the rest of the work — at least two volumes more — has been prepared, but has not yet been finally corrected and arranged. As we can print but one volume a year, it is evident that during the twelve years which have elapsed since the publication was commenced a large number of titles of books and articles received too late to be placed in their proper places must have accumulated, and this accumulation becomes more rapid every year as we get further down the alphabet in the course of printing the work. At present the number of unprinted titles thus accumulated under authors and subjects down to S, probably amounts to about 70,000 author and 240,000 subject titles, the latter of course including the titles of indexed journal articles. If these were now printed they would make about four volumes of the size of the volumes of the "Index Catalogue," and three years hence, when this first series of the "Catalogue" is finished, there will probably be material on hand enough to form at least five volumes of a supplement or second series, which will no doubt expand into six volumes by the time the printing of this second series is finished — that is, if the library continues to increase as it has done for the last five years.

The twelve volumes of the "Index Catalogue" already printed contain 137,578 author-titles covering 66,855 volumes and 120,000 pamphlets, 522,092 subject-titles covering 129,284 titles of books and pamphlets, and 393,808 articles in journals and transactions. The titles of articles in journals and transactions are printed only under subject-headings, those of books and separately paged pamphlets and reprints are printed twice — once under the name of the author, and once under the name of the subject. All the cards for journal articles have been preserved, and when the printing of the catalogue is completed, it is proposed to assort these by authors so as to bring under each man's name the title of all the articles he has written which have been indexed. Whether this will ever be printed I do not know. The chief errors in the "Index Catalogue" are those of omission. About fifty serious errors in the first twelve volumes have thus far been detected, but the main defect is the failure to include under the proper subject-headings some books and journal articles which are in the collection. We have gained experience as the work has progressed, and the later volumes seem to be more full and accurate than the first.

Of main and subordinate subject-headings the "Index Catalogue," as a whole, contains about 20,000, and in placing the proper headings on the subject cards to indicate where each is to be placed, it is necessary, in order to secure good results, that the person doing this shall not only remember the general scheme of classification, but the details of between four and five thousand of the subject-headings used. If he makes an error, the card goes to the wrong place and is liable to be omitted in printing; but, in the long run, it is sure to be discovered and placed where it belongs.

In connection with the "Index Catalogue" a few words with regard to the "Index Medicus" may be of interest. This, as you know, is in the main a record of the titles of new books and articles in periodicals received at the library, to which are added the titles of a few books advertised as published but not yet received. It is not published by the Government, but by Mr. George S. Davis, of Detroit, who pays all expenses connected with it, and is entitled to the thanks of all who use it, for his public spirit and enterprise in maintaining its existence, since the amount received by him for subscriptions, barely meets the cost of its publication. At present 482 subscriptions are made for this periodical, of which 90 come from the United States Army Medical Department, 224 from the rest of the United States, and 168 from other countries. Of the subscriptions from foreign countries, Australia

sends 5; Belgium, 2; Brazil, 1; Canada, 2; England, 41; France, 26; Germany and Austro-Hungary, 63; India, 1; Ireland, 2; Italy, 1; Mexico, 1; Russia, 9; Scotland, 9; Sweden, 2; and Switzerland, 2. Of the home subscribers, California furnished 8; Colorado, 1; Connecticut, 3; District of Columbia, 13; Georgia, 2; Illinois, 9; Kentucky, 1; Louisiana, 3; Maine, 2; Maryland, 10; Massachusetts, 31; Michigan, 8: Missouri, 4; Nebraska, 1; New Jersey, 5; New York, 69; Ohio, 8; Pennsylvania, 33; Rhode Island, 4; South Carolina, 1; Tennessee, 1; Vermont, 1; Virginia, 1; Wisconsin, 4. For the large cities, the figures are, New York, 50; Philadelphia, 32; Boston, 24; Baltimore, 10; Cincinnati, 7; Chicago, 6; San Francisco, 4; Detroit, 4; and St. Louis, 3.

This is the last of the statistics of the library and matters connected with it, which will be inflicted on you at this time. The figures themselves may be dull, but some interesting, and even amusing, conclusions may be drawn from them, which I leave for you to do.

In conclusion, I may say that the future prospects of the library are excellent. It is not dependent on the skill, or energy, or good-will, of any one man; it is becoming more and more known to, and more and more used by, the members of the medical profession, and so long as they are interested in it, the necessary appropriations will be made and the skilled force employed to increase, preserve and catalogue it. The service rendered by a number of those employed in the library is not a mere matter of money — they are deeply interested in their work and proud of the results, and they can and will carry it on and instruct others who will come after them to do likewise. They have to handle much rubbish, for the proportion of what is both new and true is not much greater in medicine than it is in theology, but in a great national collection this is unavoidable, and the best they can do is to make a first rough assortment, and then make the whole accessible to those who wish to use it. There is no doubt that the publication of the "Index Catalogue" will be completed, nor that a supplement will speedily follow.

Just at present the most unsatisfactory thing about the library is the fact that many of its books and journals are not fully available for use, owing to the fact that we cannot get them bound. Under existing laws all the binding of the library must be done at the government printing office, which has not room nor men sufficient to do the work required for the different departments of the Government and for members of Congress. The result is that the library now has about 10,000 unbound volumes, and this number is increasing every year. When a journal is sent to be bound it may be six months or more before it is returned. With the erection of additional accommodations for the government printing office, it is to be hoped that this evil will in time be abated; but there will always be more or less delay in making recent books and periodicals available for use under the present system. The most effectual remedy would be a change in the law, whereby the library could have its own binding done in its own building, and under its own control.

BREAD FOR THE GERMAN ARMY. — Owing to the excessive price of rye, the German Government has decided to use wheat in making bread for the army.

INTESTINAL PERFORATION IN TYPHOID FEVER; ITS PROGNOSIS AND TREATMENT.[1]

BY REGINALD H. FITZ, M.D.,
Shattuck Professor of Pathological Anatomy in Harvard University, and Physician to the Massachusetts General Hospital.

At the fifth Annual Meeting of the Association of American Physicians, Dr. Reeves,[2] in his paper on Typhoid Fever, says, "I have seen in five instances all the symptoms which announce and follow perforation of the bowels, yet the patients recovered." During the subsequent discussion, Dr. Loomis[3] stated, "I do not remember to have seen a single recovery after there were unmistakable evidences of intestinal perforation. Recovery from a local peritonitis complicating typhoid fever is not uncommon, but when the characteristic symptoms of intestinal perforation are present, in my experience, a fatal issue soon follows."

With such a divergence of opinion, so lately expressed, it seems desirable to reinvestigate the subject of intestinal perforation in typhoid fever, with the view of harmonizing conflicting opinions concerning its mortality, and, especially, with the hope of obtaining evidence which might aid in the treatment of this usually, if not invariably, fatal complication.

The frequency of its occurrence has been most recently considered by Schulz[4] who found that peritonitis from intestinal perforation took place in 1.2% of 3,686 cases of typhoid fever, treated in the Hamburg Hospitals during the years 1886 and 1887. He thus essentially confirms the statement of Liebermeister[5] who found intestinal perforation in 1.3% of rather more than 2,000 typhoid patients in the hospital at Bâle between 1865 and 1872.

As a cause of death in fatal cases of typhoid fever it was found by Hölscher[6] to occur in 6% of 2,000 cases.

Murchison[7] found a much greater frequency, 11.38% in 1,721 cases collected from various sources. But in 4,680 cases of typhoid fever, as tabulated by various authors, I find a mortality of only 6.58% from this cause, thus practically agreeing with Hölscher.

It occurs much more often in man than in woman. In 444 cases, I find it among men in 71% and among women in 29%. Its occurrence among children is very rare. Wolberg[8] found no case of intestinal perforation among 277 cases of typhoid children in the Warsaw hospital. The following table, representing a collection of cases chiefly from periodical literature, shows the relative frequency of the occurrence of intestinal perforation in typhoid, at the different periods of life.

AGE AT WHICH PERFORATION OCCURS.

Age.	Cases.	Per cent.
1 to 10 years	7	3.6
10 to 20 "	46	23.8
20 to 30 "	77	39.8
30 to 40 "	45	23.3
40 to 50 "	14	7.2
50 to 60 "	2	1.
60 to 70 "	1	.5
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The perforation may take place from the end of the first week to the sixteenth week, as shown by the

[1] Read at the sixth annual meeting of the Association of American Physicians in Washington, September 24, 1891.
[2] Transactions of Association of American Physicians, 1890, v. 17.
[3] Loc. cit., 21.
[4] Cbl. f. Allg. Path. u. Path. Anat., 1891, ii, 289. Jahrb. d. Hamb. Staats Krankenanstalten, 1889, i.
[5] Ziemssen's Hdb. d. sp. Path. u. Therap., 1874, ii, 1. 161.
[6] Münch. Med. Woch., 1891, xxxviii, 64.
[7] Treatise on Continued Fevers, 2d edition, 1873, 266.
[8] Jahrb. f. Kinderheilkde, 1888, xxvii, 28.

comparison of symptoms and lesions in 193 cases. The following table illustrates this point:

Date of Occurrence of Perforation.

Week.	Cases.	Per cent.
First	4	
Second	32	16.5
Third	48	24.8
Fourth	42	21.7
Fifth	27	14.
Sixth	21	13.4
Seventh	5	
Eighth	3	
Ninth	2	
Tenth	4	
Eleventh	3	
Twelfth	1	
Sixteenth	1	
	193	

The seat of the perforation in 167 cases was: the ileum in 136 (81.4%), the large intestine in 20 (12.9%), the vermiform appendix in five, Meckel's diverticulum in four, and the jejunum in two. In 19 cases there were two perforations, in three there were five, in one there were four, and in four there were several. In one case [9] there were 25 to 30 holes, and in another [10] there were 30.

The duration of life after the symptoms of perforation arose was usually short. Of 134 cases, 37.3% died on the first day, 29.5% on the second day, and 83.4% during the first week following the onset of the symptoms. During the second week nine died, four during the third week, while one lived 30 days and another 38 days.

There is no definite relation between the severity of the individual attack and the occurrence of perforation. In about one-fourth of nearly 200 cases, the course of the disease was distinctly stated as mild. Cases of walking typhoid in which perforation took place were numerous, 14 in all. Sévestre [11] reports one under his observation as "of typhoid fever without marked signs till the outbreak of grave symptoms." The case is reported by Bennett [12] of a man who was admitted to St. Thomas's Hospital for cardiac disease, with general dropsy. He was purged and, in consequence of his voracious appetite, was allowed liberal diet, including meat. After a fortnight his bowels became loose for a couple of days. Complaint was then made of general distress. There was some abdominal tenderness, which was thought to be due to peritoneal inflammation from affection of the kidneys. Sudden death took place the next day from typhoid perforation of the ileum. Finucane [13] reports a case as apparently well till within two days of his death, when symptoms of perforation took place. Kleinwächter [14] records a similar case. The patient, a woman, was about her business till forty-eight hours before death, when the symptoms of perforation began.

As the cases of typhoid fever in which intestinal perforation occurs, may be mild or severe, so may the symptoms of perforation be absent or latent, gradual or sudden. Of 80 cases in which a record is made of these characteristics, it was found that in 56 the onset of the symptoms was sudden, in 15 cases the symptoms were gradual or latent, while in five there were no symptoms whatever of perforation.

[9] Hoffmann: Untersuch. u. de path. anat. Veränd. d. Organe beim Abd. typh., 1869.
[10] Lebert: Ueber d. Typhus u. d. Typh. epid. d. J. 1857, Friedrich, Die Paracentese d. Unterleibs b. Darmperf. im Abd. typh., 1867.
[11] Bull. Soc. Anat., 1871, xlvi, 360.
[12] Trans. Path. Soc., Lond., 1866, xvii, 121.
[13] Lancet, 1889, ii, 793.
[14] Wiener Med. Presse, 1880, xxi, 337.

Laboulbène [15] reports two cases of peritonitis in typhoid fever from perforation discovered after death, "not having during life the ordinary and characteristic symptoms . . . there was neither severe pain, vomiting nor tympany. The only signs which attracted my attention and which made me think of the possibility of intestinal hæmorrhage, was a lowering of the axillary temperature with considerable chilliness of the skin." Barth [16] had a somewhat similar experience. He says, "it was impossible, despite the closest watching, to determine, with certainty, the moment of perforation; the patient had neither violent abdominal pain, vomiting nor collapse, and only the somewhat sudden lowering of the temperature on the morning of the 9th of February, led us to suppose, afterwards, that the onset of the disturbance then took place." Jenner [17] reports the case of a patient who, on the ninth day, left his bed unassisted but with some difficulty, and died some hours later, there being no complaint of pain during the day.

Differences of opinion concerning the fatality of intestinal perforation in typhoid fever have existed for many years. The earlier investigators, as Louis,[18] Chomel,[19] and Jenner [20] reported numerous cases of fatal perforation, but none of recovery. Tweedie [21] stated that, "Intestinal perforation is always fatal, generally within thirty-six hours." The possibility of recovery seems to have been first suggested in the case reported by Buhl,[22] who states that, "One of the cases of perforative peritonitis was interesting because death was not the immediate result of the perforation, since the hole was completely closed. Death occurred on the forty-fifth day of the disease and twenty-three days after the earliest symptom of perforation. It was the result of hæmorrhage from a small artery opening into the intestine near the piece of mesentery which covered the hole." Griesinger [23] after referring to the above case, and giving the history of one of his patients who died nine days after symptoms of perforation had taken place, admitted the possibility of the healing of a perforation and of recovery, "never in cases of general peritonitis, only when the inflammation is wholly circumscribed." "The rare exceptions are hardly worth considering in connection with the prognosis which is to be regarded as almost fatal when the symptoms of perforation are distinct and as absolutely fatal when gas is present over the liver." A somewhat more favorable opinion was held by Murchison,[24] who asserted that "rare cases are met with where recovery ensues after all the symptoms of peritonitis from perforation." Since the publication of Murchison's classical work the writers of medical text-books have generally held the same opinion, and medical literature contains occasional reports of cases of recovery. It is our task, therefore, to consider the evidence which warrants the view that recovery ever takes place.

The evidence of recovery from intestinal perforation in typhoid fever consists, almost exclusively, in the reports of cases of recovery from peritonitis in typhoid fever, following so-called symptoms of perforation of the intestine. These symptoms are, in brief, a sudden

[15] L'Union Méd., 1877, xxiii, 389.
[16] Bull. Soc. Anat., 1884, lix, 142.
[17] Medical Times, 1859, xxii, 298.
[18] Recherches sur la Maladie connue sous les noms de Gastro-entérite, etc., 1829.
[19] Lecons de clin. Med., 1834.
[20] Monthly Journal of Medical Science, 1849.
[21] Cyel. of Pract. Med., art. Fever, 1859, ii, 162.
[22] Zeitschr. f. Rat. Med., 1857, N. F., viii, 12.
[23] Virchow's Handb. d. sp. Path. u. Therap., 1864, ii, 1, 199.
[24] Op. cit., 569.

severe abdominal pain, often associated with collapse, at times with a lowered temperature, which is subsequently elevated. The abdomen is rigid and tender, and becomes swollen, tense and tympanitic. But little importance is to be attached to the disappearance of hepatic dulness and to the presence of a gurgling sound on respiration, as evidence of gas in the peritoneal cavity in consequence of a perforated intestine.

The former sign may be due to an abnormally small liver or to an overlying piece of intestine, and the dulness is usually found to persist when the intestine is actually shown to be perforated.

Traube,[25] in calling attention to this sign, stated the importance of the previous determination of the normal outlines of the liver dulness. Tschudnowsky's [26] observation of an abdominal murmur, louder and longer on inspiration, shorter and feebler on expiration, attributed to the passage of gas in and out of the hole in the bowel, has been confirmed by Lewaschow.[27] Botkin,[28] however, states that this sign may exist without perforation of the intestine. The rarity of the recognition of either of these signs in the literature of intestinal perforation, is sufficient evidence of their slight value, while the conditions of their occurrence, perforation with the considerable free discharge of intestinal gas, is comparatively infrequent.

The so-called symptoms of perforation merely indicate the beginning of a peritonitis, and may be present as the result of other local causes of peritonitis in typhoid fever than a perforative enteritis. Very rare, though possible, are the various causes of acute intestinal obstruction. Murchison [29] mentions softened infarctions of the spleen, softened mesenteric glands, abscesses in the wall of the urinary bladder, ovarian abscesses, "the bursting inwards of a pseudo-abscess in the sheath of the rectus-muscle," and, finally, perforating ulcers of the gall-bladder. Rupture of the spleen may be added, as in the case reported by Kiemann,[30] which gave rise to no symptoms suggesting rupture or peritonitis. Sorel [31] reports a case of subacute peritonitis the result of an abscess of the liver. A like cause gave rise to a rapidly fatal peritonitis in the case reported by Daly.[32]

Still another source of acute peritonitis in typhoid fever is to be found in the Fallopian tube, as in the case reported by Wilson.[33] His patient, a child of twelve years, died thirty-six hours after the sudden onset of abdominal pain, which was attributed to a salpingitis of the left Fallopian tube, found at the post-mortem examination. Beginning ulceration of Peyer's patches was present in the lower part of the ilium. Ranque [34] credits Bourdon with a case which may have been of a like nature. The patient was nineteen years old. After several days of prolonged symptoms she was seized with abdominal pain, a violent chill and suppression of the catamenia. Death took place six days later. There were beginning typhoid ulcers, but no perforation. The same author refers to Jaccoud as reporting a case of peritonitis in typhoid fever from rupture of the urinary bladder.

[25] Berl. Klin. Woch., 1866, iii, 68.
[26] Virchow-Hirsch Jahresb., 1869, ii, 133.
[27] Wratsch, 1890, No. 3. Cbl. f. Klin. Med., 1891, xii, 270.
[28] Louis. Prog. Med., 1890, xii, 512.
[29] Op. cit., 564.
[30] Ber. d. k. k. Krankenanstalt. Rud-Stift in Wien v. J., 1888, 1889, 291.
[31] L'Union Med., 1882, xxxiv, 321.
[32] Philadelphia Med. and Surg. Rep., 1882, xlvi, 346.
[33] Arch. of Pediat., 1887, iv, 391.
[34] Thèse, Paris, 1881.

Still another cause of peritonitis in typhoid fever is illustrated in the case reported by Hoffmann.[35] The patient gave birth to a child during the course of the fever, and died of diphtheritic endometritis and general peritonitis.

It is unnecessary to call attention to the numerous fatal cases of peritonitis in typhoid fever, in which no local cause for the peritonitis was found. Jenner [36] early published an article on the "Symptoms of Perforation of the Intestine without Existence of that Lesion." Of the case observed by him, he says: "All the symptoms said to denote the occurrence of perforation of the intestine were also present, but in her case, an examination of the body after death found those symptoms might be present without any traumatic lesion of the peritoneum." Wood,[37] a few years later, thus remarks: "I was compelled, therefore, to regard the case as one of peritonitis without perforation. No discoverable cause of the affection existed. . . . This case is calculated to throw great doubt upon the existence of intestinal perforation in those instances of peritonitis occurring in the advanced stage of typhoid fever, in which cures have been effected, of which I have been so fortunate as to witness two in my own experience. They may have been, as in the case just related, nothing more than simple peritonitis without any opening whatever through the coats of the bowel."

Since perforation of the intestine in typhoid fever may take place without any suggestive symptoms, and since suggestive, even so-called characteristic symptoms, may occur without any perforation having taken place, it must be admitted that recovery from such symptoms is no satisfactory evidence of recovery from perforation.

(To be continued.)

[35] Op. cit.
[36] Med. Times, 1850, xxii, 405.
[37] Trans. Coll. Phys., Philadelphia, 1853-56, ii, 351.

HEREDITARY AND TRAUMATIC MOTOR TABES.[1]

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The myelopathic origin of that form of progressive muscular atrophy which begins in the small muscles of the hand is now almost universally conceded. Raymond,[2] in his recent monograph on muscular atrophies, regards the scapulo-humeral type of progressive atrophy, described by Vulpian, as a myelopathy, basing his decision on an autopsy by Pierret and Troisier. The myelopathic origin of progressive muscular atrophy beginning in the lower extremities is still in doubt, but the majority of writers are disposed to believe that the peroneal type, first described by Charcot, Marie and Tooth, is also due to an affection of the large motor cells of the anterior cornua.

In the revision of the forms of progressive muscular atrophy rendered necessary by the work of the last ten years, many ideas advanced by earlier writers have been abandoned. Progressive atrophies beginning elsewhere than in the three regions just mentioned are not recognized as of myelopathic origin, except the bulbar type of motor tabes. Heredity, once uni-

[1] Read before the New York Neurological Society, March 3, 1891. I follow Schultze in using the term motor tabes as including progressive spinal muscular atrophy, amyotrophic lateral sclerosis and bulbar paralysis.

versally admitted as a cause of motor tabes, is now doubted by Raymond,[2] after a careful analysis of the most striking instances reported.

Only by careful autopsies can we distinguish absolutely between myelopathic and myopathic atrophies; but certain symptoms are held to be of some value in distinguishing between them. A case without heredity, beginning in middle life, with atrophy of the thumb muscles, with reaction of degeneration, and fibrillary twitchings, is in all probability myelopathic; if bulbar symptoms develop, this probability becomes greater. A case with pronounced heredity, beginning in childhood with atrophy of the legs, associated with pseudo-hypertrophy, and unattended by reaction of degeneration or fibrillary twitchings, is in all probability myopathic. Inferences drawn from the symptoms without the confirmation of autopsy have only a partial value; nevertheless, in spite of the striking heredity and the starting-point of the atrophy, I am disposed to regard the following case, from the age of onset and the existence of fibrillary twitchings and electrical changes, as a form of motor tabes rather than as a form of primary myopathy. Other affections giving rise to atrophy may safely be excluded.

F. L., thirty-four, married, a real-estate agent, was referred to me in July, 1889, by Dr. F. M. Johnson of Boston. He had previously consulted Dr. G. L. Walton, who made the diagnosis of progressive muscular atrophy, and gave an unfavorable prognosis.

On inquiring into the heredity, the patient told me that his mother was a D—— of Wayland, and that in her family was a curious disease known as the "D—— disease," akin to paralysis. I could get little information from him about it, or about any members of his family, and later he wrote that he thought his own trouble bore no relation to this disease, and asked me not to inquire of any of his relatives as they were very sensitive about it. A year later he told Dr. Walton that various relatives had had a form of muscular atrophy.

On inquiring into this "D—— disease" I discovered much that was interesting. Dr. Oviatt of South Sudbury, very kindly wrote me: "There certainly is a disease known as the dreadful D—— disease. It must be one of two — progressive muscular atrophy or progressive spinal paralysis. Five members of the D—— family have died from its effects in the past seventy years. The symptoms are loss of sensation and motion, first in the hands or feet, gradually extending over the entire system. Two cases before death were unable to move any member save the head. One member of the family now living in town has had some trouble with his feet within the past few years, and is quite anxious about the future. The disease has in most instances been painless. I have not learned whether or not there was a loss of weight. The last-named person is not my patient, and I cannot tell you exactly what his symptoms are."

Further inquiry showed that my patient's mother had died of the disease. A few weeks before her death a lady who saw her told me that all her limbs were helpless; she was unable to move her hand in greeting; but she could talk perfectly well, and had no mental disturbance. She looked well; whether there was any atrophy my informant could not say. The present generation are very nervous, and, if they have any slight illness, fear that it is the beginning of this disease. My patient's mother had four sisters and two brothers. Of the sisters I could learn nothing. One brother died of small-pox; the other is alive and well, and has a daughter, also well. The father (my patient's maternal grandfather) was drowned. He had a sister, of whom I could learn nothing, and four brothers, of whom three, if not four, had the disease. One of these brothers, having the disease himself, had a daughter who also had it. It was thought that the disease had occurred in a previous generation, but concerning this I could get no definite knowledge. The disease was said to come on gradually and to lead to paralysis of all the limbs. In two cases the limbs were much wasted; in a third case the patient was "swollen as big as a beer barrel."

My patient himself had used much tobacco, but little alcohol. A year before the present trouble began he was kicked by a horse in the front of the right thigh, about the junction of the middle and upper thirds. The injury caused no fracture, left no scar, and was not regarded as very serious. Six months before the present trouble he had gonorrhœa, but he denies syphilis. Otherwise he has been well and strong.

In October, 1888, he noticed one night, on going to bed, a twitching in the muscles of the right thigh, which has never ceased, has extended to the other leg, and has involved the muscles below the knee. Occasionally he thought he felt a very slight twitching in the arms and across the loins, in the deltoid, and the outer side of the upper arm more particularly. With this twitching there has been a loss of power in the right leg, confined for some time to the thigh, and associated with wasting and flabbiness of the muscles. Considerably later the lower leg was affected, the ankle turned under him very readily, and he could not move the toes well. There had been some soreness in the inner and lower part of the thigh, but never any pain, numbness, or tingling. He had occasional cramps in the foot and thigh, worse in the sole of the foot. He slept well, had no headache, diplopia, or mental disturbance. His sight and hearing were good. He accepted the prognosis given with much fortitude, but he naturally had the hope that the former decision of Dr. Walton might be reversed, and was somewhat discouraged to find it confirmed. He could talk and swallow as well as ever. With the exception of some palpitation, due, he thought, to tobacco, he had had no disturbance with any of the thoracic, digestive, or urinary organs.

The patient was a large, well-developed, muscular man. The pupils, eyes, face, jaws, and tongue moved normally. The ophthalmoscope revealed nothing. The voice was a trifle husky, but he ascribed it to catarrh, and the pharynx was somewhat reddened. He could take and hold a high note pretty well, but the pitch fell off a trifle. Examination of the chest was negative. The arms were not wasted; all movements could be performed with good strength and accuracy; no fibrillary twitchings were noted; the muscles reacted to a mild faradic current; and the triceps and radical reflexes were normal and alike on the two sides. The sensibility all over the body in its various forms was normal. He could rise from a stooping posture without difficulty.

[2] Raymond: Atrophies Musculaires et Maladies Amyotrophiques, p. 119.

[3] Raymond: Op. cit. p. 131.

The right thigh was somewhat wasted, and there was a constant fibrillary twitching of the muscles in both thighs, but most marked on the right. The movements of the left leg were well performed, and the muscles responded normally to electricity. He could not move the right hallux at all, nor could he (dorsally) extend the other toes very much. Inversion and (dorsal) extension of the foot were pretty well performed, but eversion and (dorsal) extension of the outer edge of the foot was much impaired. When both feet were held out on a chair the right foot had a tendency to fall outwards. He could not lift himself well with the right thigh (extension of the leg), nor hold himself up well on the right toe. The right foot felt a trifle flabbier, and he said it was a little tender on pressure. There was much tenderness on pressure over the inner lower part of the thigh, and some tenderness in both calves. The following measurements were taken:

	Right.	*Left.*
8 inches above upper edge of patella . . .	17½ ins.	18½ ins.
6 " " " " . . .	16½ "	16½ "
4 " " " " . . .	14½ "	15½ "
2 " " " " . . .	15 "	15 "
3 " below internal tuberosity of tibia . .	14½ "	14½ "
6 " " " " " . .	13½ "	13½ "

The muscles of the right thigh and leg did not react to a strong faradic current; they required a stronger galvanic current than did the muscles of the left thigh and leg, and the contractions were slow. Ka SZ, however, occurred before An SZ. The plantar and cremaster reflexes were lively; the knee-jerk was absent on the right, normal on the left. The foot phenomenon, front tap contraction, and ankle clonus were absent. There was no ataxia.

In August, 1890, he again consulted Dr. Walton, who has very kindly placed at my disposal some notes made by him. Dr. Walton also told me that the diagnosis and prognosis made by him the year before, with which mine agreed, were strengthened by the second examination. After returning home some physician had told Mr. L. that he had sensory tabes (locomotor ataxia), due to syphilis, and had prescribed anti-syphilitic treatment. When seen by Dr. Walton he could get about only with great difficulty and with the aid of crutches. The pupils were equal and reacted to light, but there was at intervals a very slight irregularity. He had some shooting pains in the legs, but no numbness. There was no vertigo, and no digestive or urinary disturbance. There was very great atrophy of all the muscles of the right thigh and leg, and of the left thigh, with coldness of the skin. The legs were practically powerless. There was fibrillary twitching of the deltoid and triceps on both sides, but most marked on the right.

That this man has a progressive muscular atrophy is beyond question. Sensory tabes and Friedreich's ataxia can at once be excluded. Whether this progressive atrophy be myelopathic or myopathic is open to dispute. As I have already said, I am inclined to the former view.

If this hypothesis as to a myelopathic origin be accepted, the case presents certain interesting features. The starting point of the atrophy, in the thigh, is certainly unusual. Is it a distinct type of motor tabes, corresponding to the scapulo-humeral type in the upper extremity? The invasion of the scapulo-humeral muscles, the corresponding segment of the upper limb, by the fibrillary twitching, the hand-muscles being still intact, adds a little support to such a view. On the other hand, could the kick in the thigh have acted as a localizing cause for the atrophy? That such a localization may be possible is shown by a traumatic case that I shall speak of later.

The other feature of interest is the heredity. There is certainly a most marked taint, — a thing so rare in motor tabes as to be of influence in a differential diagnosis between that and the myopathies. As to what this "D—— disease" is I cannot say. If it be a primary myopathy it is certainly of very late development, for it seeme to have come on in adults, and several of its victims at the time of onset were married and had children. Such a late development is unique in the family myopathies. I am inclined, therefore, to think that it is rather some affection of the spinal cord, perhaps a motor tabes, or perhaps, in some cases, allied to Friedreich's ataxia.

The resemblance between this case and its family history and the account of the "Wetherbee ail" given by Hammond[1] is certainly striking. The "Wetherbee ail" began in several cases with a sudden sharp sensation in the leg, the patient feeling as if struck by a whip-lash. My patient had experienced nothing of that sort. In Hammond's patient the trouble began in the same way as in mine, with a fibrillary twitching in the right thigh. Mr. Wetherbee held that the "ail" was not inherited by the descendants of females, but the "D—— disease" apparently may be, if my patient has it. As the "Wetherbee ail" was described nearly twenty years ago, the data are not sufficient to enable us to decide whether that should be regarded as a myopathy or a myelopathy. My patient knew of no relative by the name of Wetherbee, yet, curiously enough, Gardner, the home of the Wetherbees, is only about thirty-five miles in a beeline from Wayland. Dr. R. F. Andrews of Gardner, has kindly furnished me with some further information as to the "Wetherbee ail." "I do not know," he writes, "that the Wetherbees are connected with the D——s. This winter one of the Wetherbee family has died of this disease, which commenced in the left leg and thigh, thence extending to other parts of the body. She was helpless and confined to her bed. She had difficulty in clearing her throat. She was attacked with bronchitis and died of heart failure at the age of fifty-nine.

In view of the doubt which Raymond expresses as to the influence of heredity in motor tabes, it may be worth while to supplement this case with another, of the Aran Duchenne type, in which there was probably some heredity.

Alexander R., thirty-seven, single, a marble-cutter, consulted me in August, 1886, on account of trouble in his right hand. He stated that at about the same age his father was attacked with a similar trouble, which led to great muscular wasting, and he at last became helpless, dying about twenty years later. My patient denied syphilis, but he admitted a moderate use of alcohol and tobacco. His work naturally demanded much use of the muscles of his right hand and arm. Two months before he consulted me, he awoke one morning with numbness and stiffness of the right hand, most marked in the ring and little fingers. There was some loss of power but no pain at any time. Two weeks later the hand began to waste. His legs have

[1] W. A. Hammond: Diseases of the Nervous System, eighth edition, p. 541.

become rather easily tired, and he occasionally has cramps in them, but no stiffness. With the exception of a slight pain in the side and some cough he felt perfectly well. Tactile sensibility in the hands was good but touching the ring and little fingers caused a tingling sensation. Deep pressure over the median nerve was somewhat painful on the right side; but pressure over other nerves caused no pain. All movements of the right hand could be made, but abduction and adduction of the fingers was imperfectly performed. The right hand, he said, used to be the stronger, but the dynamometer registered 55, to 90 for the left. There was distinct atrophy of the interossei and thenar muscles of the right hand, but the electrical reactions were unchanged. Measurements of the arms gave the following results:

	Right.	*Left.*
Upper arm, down	10 ins.	10½ ins.
" " up	11½ "	11½ "
Forearm lax	9½ "	9½ "
" contracted	9½ "	10½ "
Hand under knuckles	8½ "	8½ "

There was no atrophy elsewhere, and no bulbar symptoms. The skin reflexes were normal, the knee-jerks slightly increased, the triceps and radial reflexes were more marked on the right, and the ulnar reflex was present only on the right. Further examination was negative, except that the patient had Riggs's disease, but there was no lead line. The patient failed to return to the clinique and subsequent efforts to find him have proved unavailing.

As the influence of trauma in producing chronic degenerative processes in the central nervous system is still somewhat in dispute, I have thought it of some interest to add the following case, probably of traumatic origin, and pretty clearly myelopathic. It seems somewhat doubtful what muscles were first involved, but the morbid process had involved the upper arm as much as the forearm.

Crowell B., fifty-five, married, employed in a rubber factory, but having more or less to do with metal work, castings, etc., using more or less lead, was referred to me in March, 1889, by Dr. C. M. Godding, of Providence, R. I. He had always been fairly well; his habits had been temperate; and he had never had lead colic. His gums were spongy, and there was a very questionable blue line. A year ago he fell, striking his right elbow with some force; but he paid little attention to it, was not laid up, and did not lose the use of the arm. After the fall, however, the present trouble gradually developed, and the right arm grew weak. In August, 1888, he noticed rather suddenly that he could not hold a pen. Before and since that time, with the weakness, there had been a constant ache in the arm, from the shoulder down; this aching was of variable intensity, and was worse in wet weather, but it increased in severity pretty steadily. There were no peculiar sensations in the arm except the pain and a throbbing from the shoulder to the hand. Cold made the pain worse. The arm had wasted considerably. The hand had swollen at times. In the last month, since an attack of influenza, he had been more easily fatigued on walking. In October, 1888, he began to notice twitchings of the muscles of the arm, which have persisted, and have extended to the other side. Within two weeks he had noticed a similar throbbing in the left shoulder, going down to the thumb, but there had been no pain or weakness in that arm. At times, usually on Sundays, after extra work on Saturday, he had a headache. His sight and hearing were good, and there never was diplopia. In the morning his mouth felt dry, so that at first it was a little difficult to swallow; but, with this exception, he had no difficulty in swallowing, and no increased flow of saliva was noticed. He had no pain in the back, and no respiratory, digestive or urinary symptoms.

The patient was well developed, fairly nourished, with pronounced atrophy of the right arm. The movements of the eyes and pupils were normal, and the ophthalmoscope showed no changes. Movements of the muscles of the jaws, face and tongue were natural; there was a slight fibrillary tremor of the tongue, but no tremor of the lips. His speech was not affected. There was weakness of all the muscles of the right arm, including the muscles of the shoulder. Most of the movements of the arm could be made, but all were feeble. He could not completely raise or supinate the arm, spread the fingers or oppose the thumb. The right upper arm was an inch smaller round than the left, and the forearm three-quarters of an inch smaller, all the muscles apparently being involved. There was some wasting of the shoulder muscles, and pronounced atrophy of the thenar muscles and the interossei. There was no marked wasting of the left arm.

There were constant and very pronounced twitchings in the muscles, affecting sometimes a very few fibres, and sometimes large bundles of fibres. These twitchings were very marked in both arms, and in the pectoral and scapular muscles of both sides: they were also present in a very slight degree in the legs.

These twitchings were so constant, so frequent, and so great as to render it impossible to test the electrical reactions with any accuracy. The deltoid, biceps, and triceps apparently reacted alike to faradism on the two sides. The reactions of the muscles of the right forearm could not be determined. The flexor brevis pollicis could be tested. It required a stronger faradic current to produce a reaction on the right, and the galvanic reactions were diminished, slow and altered.

Right.	*Left.*
Ka SZ 8 Ma.	Ka SZ 4.5 Ma.
An SZ 6 Ma.	An SZ 7 Ma. (Erb's 10 sq. cm. electrode, Edelmann galvanometer.)

The right hand was stiff, and passive extension of the fingers, and passive movements of the hand and shoulder were impaired. The right arm was colder, there was some stasis, and he stated that it was more sensitive to cold. The sensibility in the arms to touch, pain, pressure, location, temperature, form, position and motion was good. The tendon reflexes of the arms were very greatly increased. The knee-jerk was slightly more marked on the right, and a patella twitch could be obtained on that side through the trousers. There was no clonus. The right arm was somewhat tender to pressure, but the tenderness was not especially over the nerves. There was no special spinal tenderness. Examination elsewhere was negative.

I advised him to take iodide of potassium in full doses (thirty grains), and to try galvanism, in the hope that lead might have had something to do with the trouble, but the treatment proved unavailing, and the trouble made a steady progress.

In June, 1890, Dr. Godding informed me that he had well-marked symptoms of bulbar paralysis, and since then he writes as follows:

"Mr. B. is still alive, but he is in a most pitiable

condition. He is totally paralyzed, as far as voluntary motion is concerned, below the muscles of the neck, although when he is placed upright in a chair, he can stay in that position. He cannot change his position in the least without assistance. The bulbar symptoms are progressing very slowly. He can still swallow solid food as a rule fairly well, but liquids give the greatest trouble, and often cannot be taken at all. Speech is entirely gone. He can make inarticulate sounds, which to my ear are all alike, but his wife, from familiarity with his wants, can still at times catch his meaning. There is at times great difficulty in breathing from dryness of the throat and hypertrophic rhinitis. There are at times large accumulations of tenacious mucus in the throat, which he cannot expectorate, and which have to be removed with a swab. He has developed some hysterical symptoms, laughing and crying immoderately at times. The muscular atrophy has progressed to a considerable extent. The pain, which when you saw him was mostly in the right shoulder, has been of late confined to the left arm and shoulder, and it can be controlled only by opiates."

The onset of bulbar symptoms renders the diagnosis of motor tabes most probable.

Medical Progress.

RECENT PROGRESS IN GYNECOLOGY.

BY F. H. DAVENPORT, M.D.,
Instructor in Gynecology, Harvard Medical School.

EFFECT OF VENTRO-FIXATION OF THE UTERUS ON SUBSEQUENT PREGNANCY.

Dr. S. Gottschalk[1] gives the history of a case which throws some light upon the question of the behavior of a uterus which has been the subject of ventrofixation, in the event of a subsequent pregnancy. The patient was operated upon for an ovarian cyst, and at the same time the retro-flexed uterus was fastened to the lower angle of the abdominal wound. It remained in normal position for a year, when conception occurred. In the third month the patient aborted, and as it was necessary on the following day to remove the products of conception, the following state of things was observed: The body of the uterus, enlarged to the corresponding period of pregnancy, was anteverted and firmly adherent to the abdominal wall, the cervix high up, almost out of reach. On bimanual examination of the uterine cavity the anterior wall was found to be thicker than normal, the posterior, on the contrary, thinner. This condition Gottschalk explains on the supposition that as the anterior wall could not, on account of the adhesions, stretch as the ovum increased in size, the posterior wall became distended to its maximum, and in consequence the miscarriage resulted.

This case would justify the opinion of Küstner that pregnancy following this operation will usually end in abortion. On the contrary, Olshausen[2] cites a case operated on by Kaltenbach in 1887, where pregnancy went to full term, at which time there were no adhesions present. Gottschalk admits the possibility of the adhesions giving way as Olshausen says, "through the marked changes in the circulation of the genital organs during pregnancy," but also refers to the possibility that they had become separated before conception occurred.

[1] Centralblatt für Gynakologie, No 8, 1891.
[2] Zeit. für Geb. und. Gyn., Bd. xx, p. 230.

THIOL IN DISEASES OF WOMEN.

Gottschalk[3] recommends this new drug as a substitute for icthyol, on account of its absolute freedom from odor. He employed it first for para- and peri-metritic exudations, using tampons soaked in a ten to twenty per cent. solution of thiol in glycerine, which are changed every second day. At the same time a salve of thiol is rubbed into the abdomen. This in a few days causes an irritation similar to iodine. Under this treatment Gottschalk has seen large exudations disappear in a few weeks.

For erosions he uses the dry thiol powdered on the vaginal portion, and for endometritis the liquid preparation applied to the canal by means of cotton on a probe. In all these methods he finds the drug very satisfactory.

THE FAVORABLE TIME FOR IMPREGNATION, AND THE VITALITY OF THE SPERMATOZOA.

Prof. Bosse[4] has made some interesting studies on these points, about which considerable differences of opinion have prevailed among authorities.

First, as to the most favorable time for impregnation. His first series of observations were with women who became pregnant for the first time immediately after marriage, and wives of sailors where the date of intercourse could be definitely established followed by periods of long absence.

There were twenty-seven such cases, in all of which except one the date of confinement made it probable that impregnation occurred during the four days immediately following menstruation. In the exceptional case, intercourse took place seven days before menstruation, and not again for a month. There are two alternatives, either that the confinement was tardy, as it did not occur until the 285th day, or that as the author has shown is possible, the spermatozoa retained their vitality in the vagina until after the menstruation, and impregnation occurred then.

His second series of observations is of cases of artificial impregnation. He reports eleven cases, of which nine were successful. In one the successful injection was made the day before the menstruation occurred. In the remaining eight, after several unsuccessful attempts at other periods, the successful injection was made in five cases in the twenty-four hours following the cessation of the catamenia; in two, on the second day; and in one, on the third day.

His third series of experiments was made to determine the length of time during which the spermatozoa retained their vitality in the vagina. His methods which should be studied in the original were apparently conducted with the most scrupulous care, and the results he arrived at were as follows:

(1) Of eight cases where the semen was deposited in the vagina before the menstruation and examined for afterwards, in four no spermatozoa were found; in three they were found alive; in one dead.

(2) Of twelve cases where the semen was deposited after the menstrual period, in four no spermatozoa were found; in eight they were found living at from three to seventeen days subsequently. These investigations justify the author in concluding that the favorable time for impregnation is immediately after the

[3] Cent für Gyn., No 12, 1891.
[4] Nouvelles Arch. d' Obs. et de Gyn., April 25, 1891.

catamenia, that the spermatozoa may retain their vitality for at least seventeen days in the vagina and even through a menstrual period, and that cases of prolonged gestation may be explained by the fact that fecundation may have taken place a number of days after the last cohabitation.

While there is a great liability to error in investigating so delicate a subject as this, yet these observations seem to have been very carefully made, and are a valuable contribution to the subject.

TWO NEW METHODS FOR THE CLOSURE OF RECTO-VAGINAL FISTULÆ.

Le Dentu[5] proposes a new method for cases of recto-vaginal fistula. He prepares a flap in the shape of a half-moon, immediately below the vaginal opening into the vagina, then refreshes a corresponding surface above the fistula, and unites the flap to the refreshed surface. In this way there results a valve-like closure.

It is not applicable when the fistula is high up in the vagina, or when it opens into the vulva, or is very large.

Felizet[6] describes still another method. He splits the perineum transversely to a point above the fistula. In this way two fistulæ result, a vagino-perineal and a recto-perineal. The first is closed by sutures, and the latter is opened up through the sphincter and anterior rectal wall in the same manner as for the ordinary fistula in ano. The gases and fæcal masses escape through the free opening, and allow the vaginal fistula to close.

GONORRHŒA OF THE TUBES AND PERITONEUM.

Martin[7] examined the contents of the tubes in twenty-six cases of pyo-salpinx, and in eight cases found bacteria of various kinds which in three cases were the characteristic gonococci of Neisser. Two of the patients recovered from the operation, one died thirty-six hours after laparotomy from septic purulent peritonitis, probably caused by the escape of pus into the peritoneal cavity at the time of the operation. A careful bacteriological investigation failed to find any gonococci in the contents of the peritoneum.

Martin says that the question whether the gonococcus Neisser which has an especial predilection for mucous membranes with cylinder epithelium, and under occasional conditions is found in pavement epithelium, if placed in an active state on the peritoneum can cause a true gonorrhœal peritonitis, cannot be settled until a large number of well-proven cases are at hand.

MENSTRUATION AND OVULATION IN THEIR MUTUAL RELATIONS.

Steinhaus[8] in a prize essay published in Leipzig has very exhaustively treated this subject, and has advanced a new theory of menstruation and its relation to ovulation.

The first part is historical, and gives a critical account of what has been written from the first notice of the subject in Sanscrit 1,400 years before Christ to the present time.

The second part discusses the various theories of menstruation and ovulation under special heads: (1) ovulation; (2) menstruation; (3) ovulation and menstruation during pregnancy and lactation; (4) menstruation after castration, and ovulation after hysterectomy; (5) ovulation and menstruation considered in their mutual relations.

The third part deals more in detail with the theory of menstruation in its relation to ovulation; and the author, by looking at the subject in a new light, seeks to reconcile some of the contradictions and to give a rational explanation. He does not find any ground in facts for supposing a dependence of menstruation as a function of a specially differentiated part of the excretory canal of a gland, upon the function of the gland itself, that is, upon ovulation. It is different when we consider, not the function of the ovary, but the organ itself. If the ovary atrophies or is removed, atrophy of the canal leading from it occurs; in consequence of this atrophy of the remaining genital organs, menstruation ceases. On this theory the difficulty between the facts, that, after castration menstruation stops, and that menstruation is independent of ovulation, is removed.

CONTRIBUTION TO THE STUDY OF OVULATION AND MENSTRUATION.

Cohnstein[9] undertakes in this article to determine whether an artificial irritation of the ovaries is capable of producing the vaso-motor reflex necessary for menstruation, and also what rôle special conditions, as, for example, irritation of the external genitals, play in the causation of the menstrual flow. In his investigations he employed women whose ovaries could be easily palpated, the object of his investigations being to determine whether menstruation could be brought on by manual compression of the ovaries.

His results are as follows: (1) There exists a periodical and causal connection between the ovarian and the catamenial functions. The ovarian changes precede the uterine, and determine them. (2) If the ovarian activity is suspended, neither menstruation nor any of the accompanying changes in the uterus occur. (3) Ovarian activity may occur without menstruation, as, for instance, during lactation. The functional activity of an ovary can be inferred from its reaction to irritation. (4) Menstruation can be brought on before its regular time, but it is always preceded by changes in the ovary, induced, for example, by irritation from pressure. (5) The ovaries seem to alternate in the production of follicles ready to burst. (6) That Graafian follicles can ripen at any time is not proven, nor can menstrual bleeding or uterine changes occur at any given time in the intermenstrual period.

VENTRAL FIXATION.

Strelen[10] describes the method which P. Müller employs in his operations for the relief of prolapsus uteri by ventral fixation, and gives the details of eleven operations, six of which were complicated with abdominal tumors, and five were of simple prolapse. The results were by no means satisfactory, as in only two cases did a definite cure follow.

Delageniére[11] considers ventro-fixation indicated in prolapse of the uterus, in cases of extreme retro-deviation with adhesions, and in cases of backward displacement without adhesions as soon as serious symptoms arise. In cases of inversion of the uterus also, he would consider laparotomy and subsequent ventro-fixation less severe a measure than vaginal amputation.

[5] Ann. de Gynecol., November, 1890.
[6] Ann. de Gynecol., January, 1891.
[7] Zeit. für Geb. und Gyn., xxi, 1891.
[8] Schmidt's Jahrb. der Gesammt. Med., 1891.
[9] Deutsche Med. Woch., No 34, 1890.
[10] Inaug. Diss. Bern., 1890, ref, Schmidt's Jahrb., 1891.
[11] Ann. de Gyn., December, 1890.

Finally, he would recommend the operation in certain cases of prolapse of the ovaries.

He reckons the mortality of the operation at a little over one per cent.; and, as regards success, out of eleven cases of prolapse there was failure in two, and of seventy-eight cases of retro-displacements, eight were not successful.

Küstner,[12] after giving the history of several cases of prolapse and retro-version and flexion treated in various ways, gives the principles in accordance with which he treats cases of retro-flexion with adhesions.

In case the reposition cannot be accomplished bimanually or with the sound, or the uterus cannot be held by a suitable pessary the patient should be anæsthetized, and the replacement tried bi-manually, the thumb of one hand in the vagina, one or two fingers of the same hand in the rectum, and the other hand on the abdomen. If strong adhesions are present, Schultze's method of forcibly separating them should be tried.

If the adhesions will not yield, massage may be tried for a month, or they may be separated through an abdominal incision. The best method for accomplishing this is with the Paquelin thermo-cautery, which prevents hæmorrhage and the reforming of the adhesions. If the uterus is freed in this way, farther treatment should depend upon the age of the patient and the condition of the tubes and ovaries. If the patient is in the child-bearing age, ventro-fixation is to be avoided, for the reason that pregnancy would result in an abortion from the inability of the uterus to grow in the right direction on account of its adherence to the abdominal walls. In such cases a pessary should be fitted. Has she passed the menopause, or if she is near it, the uterus should be sutured to the abdominal wall.

Sperling[13] gives the details of ten cases of retro-flexion operated upon by Leopold in accordance with his simple method of suturing the freed body of the uterus to the lower angle of the wound with from one to three silk sutures, through the whole thickness of the abdominal wall and the muscles of the uterus, and allowing them to remain from fourteen to sixteen days.

Of nineteen cases of Leopold, sixteen did perfectly well, two were made decidedly better, and one was a failure. Three of Leopold's cases became pregnant again, and had no difficulty, showing, as have Kaltenbach and Sänger, that the possible occurrence of pregnancy is no contra-indication to the operation.

As regards the lasting effect of the operation, most of Leopold's cases have been under observation several years, and all have held. The best results have been in cases where the appendages were removed at the same time.

THE elector of Saxe-Coburg-Gotha has approved a law fining the father of a lad below the age of eighteen or a girl less than fifteen years old, who goes to a ball, 130 marks.

THE daily press announces that it is a common practice in European cities, and even in New York, for ladies to inject different perfumes hypodermically, by which means a perfumed perspiration is produced, which is said to add greatly to their personal charms.

[12] Volkmann's Samml. Klin. Vor., No. 9, 1890.
[13] Deutsche Med. Woch., No. 5, 1891.

Reports of Societies.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

SECOND TRIENNIAL MEETING HELD IN WASHINGTON, SEPTEMBER 22, 23, 24 AND 25, 1891.

(Concluded from No. 13, page 330.)

GENERAL SESSION. — WEDNESDAY. — SECOND DAY.

THE LATE MANIFESTATIONS OF SYPHILIS,

by P. S. CONNER, M.D., Cincinnati, O. More than any other disease, not excepting tuberculosis or cancer, syphilis is the common meeting ground of us all, physicians, surgeons, obstetricians, specialists, pathologists, sanitarians. Modified by transmission through a dozen generations, it is still a dreadful and dreaded ill. Were there only the early lesions, syphilis would take place among the minor ills, and this is the history in the large proportion of cases. Probably in three or four out of five of the acquired cases, the disease is short lived and does but little damage. There is, however, no means of saying in any individual that in a few months or years the disease will be eliminated. Those syphilitic by inheritance suffer from late lesions in far greater ratios than the acquired cases.

There is no sharply defined line between the early and the late constitutional symptoms. Speaking generally, the late lesions are neo-formative, the early hardly ever so; so that the gumma is the sign and seal of the tertiaries. Further they are not communicable. As a rule, they are quietly developed. No region or organ is exempt from invasion with resulting new growths. Of most frequent occurrence are the affections of the bones and of the nervous system. The lesion of the bone may be single or multiple. The symmetrical involvement of bones is exceptional. Liquefaction is rarely observed, and suppuration only an accident. As ordinarily seen at the present day, extensively destructive and deforming bone inflammations are almost confined to the head and the nasal regions. The reason of this is probably the exposed position of the bones, the thinness of some of them, the abundance of small vessels, and the intimate fusion of mucous membrane and periosteum. In the adult and acquired, there is seldom difficulty in recognizing the specific character of the lesion.

Though a large proportion of chronic bone and joint disease in the child, the adolescent and the young adult is tubercular, yet the cases in which it is syphilitic are by no means few. This may be recognized by the location of the disease, by recognition of traces on the cornea, the teeth and the skin, by application of the therapeutic test; and when practical, by inoculation.

The most frequent and the most dangerous lesions are those of the nervous system. Dr. Horsley, in speaking of cerebral gumma, declared that "medicinal treatment in nowise cures, and only very temporarily alleviates the trouble. . . . Excision offers the only chance for the patient." Is this the fact? Has not more than temporary alleviation followed the use of the iodides? However great the advance of brain surgery in the last few years, would not the outlook of the syphilitic be worse than it is, if only in the removal of the gumma could be found a chance of recovery? The affections of motion, sensation and intellection are frequent in the order given. The first at some time and in some degree is present in every case.

Hysteria may mimic syphilis. It is infrequent in men, while brain syphilis is rare in women. In brain syphilis, paralysis is more common than convulsions. Sensation frequently remains unaffected. Disturbances of intellection are almost necessarily associated with any brain lesions.

In certain cases, although rare, marked motor, sensory and intellectual disturbances occur suddenly and together. Ordinarily after sleep the patient is found in a state of stupor, from which it is possible to rouse him partially. The muscles are relaxed. The pulse ratio is decidedly lessened, the breathing is slow, and the temperature is subnormal. Under mercurial treatment, promptly and persistently maintained for many months, relief, even permanent, may be expected and secured.

Spinal lesions are of infrequent occurrence. Exostoses of the spinal canal may occur and neoplasms develop. There may be pain and paralysis affecting different parts according to the location of the lesion. A question of much interest is the causative relation of syphilis to locomotor ataxia. That the majority of ataxics have had syphilis cannot be questioned. Tabes is certainly not of true gummatous origin, nor can the sclerosis be regarded as the result of the diffused formation so often found in the cerebro-spinal axis, as in other parts of the body. Syphilitic treatment generally fails to cure or even to retard the evolution of symptoms.

There are many things about late syphilis that deserve careful study. What is the explanation of the long years of intermission with the after-development of grave functional and organic disturbances? Where has the disease been lurking all these years?

What are the relations of syphilis to other diseases and to injuries? Preëxisting tubercular disease renders probable a more severe and often a more rapid syphilitic course. To the "strumous" individual the specific infection is more dangerous than it is to others. That specific lesions may become tuberculized has been proven, but only rarely does the tubercle bacillus find a nidus in and about a syphilitic new formation. Syphilis is not likely to be inoculated on a person suffering with cancer, and if it is there is no good reason why the two diseases should not each go on in its natural way. On the other hand, cancer may, and not so very rarely does, attack an area in which there had long been specific thickening and induration, as in the chronic leucomata of the tongue. Once in a while a gumma undergoes cancerous degeneration, more often when situated in the tongue than elsewhere. The local affection no longer amenable to specific treatment goes on steadily from bad to worse. In certain localities, especially in the breast, a gumma may readily be mistaken for a cancer. If syphilitic growths do not become sarcomatous, they often resemble sarcomata, and many a reported successful operation for the malignant affection, has been really one in which a gumma has been removed.

As a rule, the wounds of syphilitics, when the disease is in a latent stage, heal as promptly as in other cases, although union may be delayed or even prevented until after the patient has been brought under the influence of the antispecific remedies. This is less true of wounds of the soft parts than those of the hard parts, as fractures, where at times false joints will form in spite of the most judicious treatment. When the specific lesions are in the process of evolution, the chances of interference with proper repair are not few, and no operation should be done at this time which can be postponed. Indeed at any time before doing an operation the success of which depends on primary union, it is well to keep the patient for several weeks under the influence of the iodides and mercurials. Very rarely does any wound become actually syphilitic. In one who has had the disease although there have been no manifestations for years, any traumatism may be the starting-point of extensive specific lesions.

In very many cases of aneurism under forty years of age, the lesion may be consequent on syphilis.

The mortality-rate of acquired syphilis is rare. In its inherited form the disease is a very grave one. Four-fifths of the pregnancies terminate prematurely.

Dr. Abner Post, Boston: In speaking of syphilis, he spoke from the standpoint of the clinician and student, and not from that of the pathologist. He called especial attention to what is known as late hereditary syphilis. This relates to those who have inherited the disease and only after a lapse of years show symptoms corresponding to the tertiary symptoms of acquired syphilis. The later forms of acquired syphilis are not necessarily a part of the case. The so called late lesions occur much earlier in the history of the disease than we are in the habit of thinking. After the third year the chances of a recurrence grow steadily less. As a preventive of late symptoms, early treatment by mercurials must be ranked high; but no methods will allow us to promise a cure, that is, absolute immunity from subsequent attacks.

The different symptoms were taken up in order. Induration and enlargement of the lymphatic glands is one of the common symptoms of early syphilis. In late hereditary syphilis the part played by lymphatics is great.

Cutaneous lesions are second in frequency to the lesion of the nervous system in late-acquired disease.

Diseases of bones were next referred to. A difference between tuberculosis and syphilis lies in the preference of syphilis for the long bones and their shafts, while tuberculosis attacks by preference such bones as those of the wrist and ankle. Diseases of the joints are at times undoubtedly the result of syphilis.

Reference was next made to intestinal and gastric symptoms in syphilitics. It is fairly well established that very serious lesions of the gastro-intestinal tract may take place. As one of the possible causes of disease of the ileo-cœcal valve, syphilis must be given a certain amount of consideration.

In diseases of the nervous system there is a large field which lies practically unexplored in congenital syphilis. An interesting question is, How much influence should a negative history have in a doubtful case? There are many cases in which the existence of syphilis is not known by the patient.

Every prognosis must be a matter of special consideration. It is the persistence of the damage and not the specific lesions that cause the persistence of the symptoms. There is something to be deduced in the manner of treatment. Anti-syphilitic treatment has great power over the active process of late lesions, but it is powerless to restore the tissue already destroyed. The attempt to destroy a syphilitic tertiary sore is, in general, futile. The late lesions of inherited syphilis are as readily controlled as those of acquired disease. The amount of iodides that may be administered is

very large. In regard to the treatment as an aid in a retrospective disease, too much value must not be placed upon this element in doubtful cases, for mercurials and iodides do have some influence over tuberculosis.

The study of syphilitic phenomena is a necessity of medical progress. The possibility of syphilis renders uncertain the diagnosis of tuberculosis and cancer and other malignant forms of disease. We need the most careful clinical studies; we need hospitals specially devoted to syphilis; we need to make its study obligatory.

The subject was further discussed by DR. ROBERT T. EDES of Washington, and DR. JAMES NEVINS HYDE of Chicago.

GENERAL SESSION. — THURSDAY. — THIRD DAY.

FIBROID PROCESSES (CHRONIC, INTERSTITIAL, INFLAMMATION SCLEROSES), THEIR PATHOLOGY AND ETIOLOGY, WITH ESPECIAL REFERENCE TO THE INFLUENCE OF DIATHESIS AND HEREDITY.

The discussion was opened by DR. A. L. LOOMIS of New York.

Fibroid processes cannot be spoken of as degenerations, for they imply an active process productive in character. There is always a higher than normal grade of activity in those elements which develop connective tissue. The only way in which fibroid tissue can develop, is from growing cellular elements. He excluded from the list of true fibrosis all conditions of simple preponderance of fibroid tissue from the atrophy of other elements. Two forms of fibrosis were described at length, the hyperplastic and the inflammatory. The first is due to diminished nutritive supply, to parenchymatous atrophy, to nuclear proliferation, and to connective tissue hyperplasia. The inflammatory form is due to parenchymatous degeneration, to constitutional influences, and to local attraction by the products of tissue change, positive chemotaxis.

All those agencies which diminish the vital forces by which the cell appropriates to itself its proper elements, tends to the production of fibrosis. These agencies may be mechanical, chemical or mental. Among the causes of fibrosis may be mentioned direct stimulation of fibrous growth, all conditions including limited degrees of nutritive supply, all conditions and elements which induce perverted nutrition, either degeneration or necrosis including mechanical forces, perverted or defective nutritive supply, and all toxic and trophic influences.

The relation between diathesis and fibroid processes was next considered. A diathesis may manifest itself by any bodily function displaying an activity out of proportion to the stimulant applied. In the fibroid diathesis the growth of fibroid tissue is out of proportion to the amount of stimulation. Fibroid processes are not always injurious, as is seen in cases of cured tuberculosis. In seventy cases of cured tuberculosis under the observation of the writer, fifty-four presented well-marked evidences of fibrosis. Diathesis often determines the nature or prominent action which will follow any given irritant or stimulation, provided more than one is possible; it also modifies the ratio between the established process and its causes.

DR. WILLIAM OSLER, of Baltimore, considered the fibroid process under the heads of degenerative, inflammatory, and developmental. The degenerative were subdivided into the atrophic, the secondary degenerations, the toxic forms (as from lead, ergot, syphilis), the scleroses associated with similar changes in the smaller arteries and capillaries. The degenerative form includes the greatest number.

The inflammatory form was subdivided into the secondary forms in consequence of reactive inflammation following hæmorrhage, tumors, foreign bodies, abscess and trauma: the scleroses which follow primary encephalitis or myelitis.

The following questions were suggested for consideration:

(1) What is the relation of vascular change to the degenerative scleroses? How far histologically are are they mesodermal or ectodermal, or are they mixed, containing both neurogliar and collagenous connective tissue?

(2) The lobar scleroses of children. What is the nature of the primary affection? Is it inflammatory? An encephalitis or meningo-encephalitis? Or is the essential lesion in the vessels?

(3) Developmental. Can we recognize a purely ectodermal form?

DR. CHARES L. DANA, of New York, referred to the chronic fibroid processes of the spinal cord. He classified them into, (1) primary degenerative, (2) secondary degenerative, and (3) reparative and inflammatory. The first includes locomotor ataxia, lateral scleroses, combined scleroses, progressive muscular atrophy, and amyotrophic sclerosis. These scleroses are not inflammatory, but due to the destruction primarily of cells and fibres. The causes of this degeneration were either toxic substances or disturbance of nutritive equilibrium by infectious vascular strain, or imperfect nutritive supply. They are not related to any special diathesis.

The secondary fibroid processes, so-called, have been shown by French pathologists to be probably, to a great extent, neurogliar proliferations or gliosis, not a fibrosis.

The inflammatory scleroses, including chronic myelitis, diffused myelitis and transverse myelitis, are mixed processes composed of a simple necrotic process, inflammatory processes and secondary degenerations.

DR. WILLIAM T. COUNCILMAN, of Baltimore, referred to the fibroid process as found in the liver, giving the results of investigations made in the Johns Hopkins Hospital.

The General Session of the Congress then adjourned *sine die*.

AMERICAN SURGICAL ASSOCIATION.

TWELFTH ANNUAL MEETING HELD IN WASHINGTON, SEPT. 22–25, 1891.

TUESDAY. — FIRST DAY.

THE Association was called to order by the President, DR. CLAUDIUS H. MASTIN, of Mobile, who delivered the Presidential Address.[1]

The next paper was by Dr. D. HAYES AGNEW, an abstract of which follows:

PRESENT STATUS OF BRAIN SURGERY, BASED ON THE PRACTICE OF PHILADELPHIA SURGEONS.

What is the present position of brain surgery and what practical lessons can be deduced from a review

[1] See page 337 of the Journal.

of the recorded results in this department of surgery? The object of the author was not to glean the entire field but to confine himself to the work done by Philadelphia surgeons in trephining for epilepsy (traumatic and Jacksonian), intracranial abscess, hæmorrhage, hydrocephalus, cephalalgia, microcephalus and neoplasms.

Traumatic Epilepsy. — Fifty-seven cases were recorded. Of this number forty-one recovered from the operation, four died and of twelve the result is not given. Thirty-two experienced temporary relief, nine obtained no benefit, four passed out of observation, four were operated on too recently to permit of the result being determined, and four are reported cured. In one of the cases reported cured the patient has been free from attacks for twenty-eight months, in two, for ten months, and in the fourth, a branch of the great occipital nerve was found imprisoned in the bone cicatrix. While the results in these cases have not been satisfactory, it by no means follows that surgery holds out no hope against epilepsy. It is not saying too much to assume that surgery is responsible for the great majority of traumatic epileptics, though this statement does not by any means criminate the surgeon of an early day. Whenever the profession can accept the doctrine that all depressed fractures, however slight the depression, and entirely irrespective of pressure symptoms, are proper subjects for trephining, then will traumatic epilepsy largely disappear from the list of surgical diseases. It is not improbable in view of the greatly diminished risk of trephining that the operation will be extended even to cases of simple fracture or fissure of the skull.

Jacksonian Epilepsy. — The table contains fourteen cases. In all, the discharging centre was removed. Nine recovered and four died. Of those recovering, three had less frequent and less violent attacks, one realized slight benefit, one disappeared shortly after operation, and in two no benefit was observed. One is reported as cured, and in that case the operation was done during the present year.

Abscess. — Eighteen cases of this nature have been collected. Six had had fracture of the skull, two had syphilitic necrosis. In one a foreign body had entered the brain; in nine the abscess was due to middle-ear disease, and in two there had been a severe blow without fracture of the skull. All the patients died in less than fourteen days.

Five cases of trephining for *Intracranial Traumatic Hæmorrhage* are recorded. In each instance the symptoms necessitating operation developed within twelve hours after the reception of the injury. Four of the five cases recovered not only from the operation but with the restoration of the suspended functions.

Of trephining for *Acute and Chronic Hydrocephalus* five cases are reported. All the cases died, one living to the forty-fifth day. As hydrocephalus is usually due to tubercular disease or to morbid growth, it is difficult to understand on what ground such operations are undertaken.

Cephalalgia. — Five cases are given, in each of which the focus of pain was referred to the neighborhood of a scar on the scalp. In four of the cases complete relief was afforded.

Trephining for Microcephalus. — Seven cases are reported, of which four died and three recovered from the operation. One of the deaths, however, was due to scarlet fever occurring shortly after the operation. The result in successful cases is reported as moderate improvement. From the results obtained from the education of idiots, the author thought it wiser to relegate these unfortunates to special training-schools rather than to the trephine and rongeur. The debatable cases would be those accompanied with athetosis, in which condition some improvement might be obtained.

Brain Tumors. — Only four operations for brain tumors have been done by Philadelphia surgeons. In one the growth was a fibroma weighing four ounces. The operation was done by Dr. Keen, December 15, 1887, since which time the patient has had only six epileptic seizures. In the second case done by the same operator the tumor was in the occipital lobe and not removable. The patient died the following day from shock and hæmorrhage. In the third case no tumor was found and in the fourth a cyst occupying the cuneus was found and emptied. The patient died in thirty-six hours and at the autopsy a large sarcoma was found occupying the tempora-sphenoidal lobe.

The deductions presented by the author are as follows:

(1) That all fractures of the skull attended with depression however slight and entirely irrespective of symptoms, should in view of the late after-effects be subjected to the trephine.

(2) That trephining for traumatic epilepsy promises only palliation at best.

(3) That trephining for Jacksonian epilepsy is to be regarded as only affording temporary benefit.

(4) That trephining for abscess in view of the fact that all such cases left alone almost invariably terminate fatally, is entirely proper and that the earlier such operation is done the better.

(5) That trephining for intracranial traumatic hæmorrhage is both an imperative and highly promising operation.

(6) That trephining for cephalalgia or traumatic epilepsy, medical measures having failed, should be undertaken with every prospect of success.

(7) That trephining for hydrocephalus is a useless operation.

(8) That trephining for microcephalus, independent of athetosis, confers no credit upon surgery.

(9) That it is more than probable that as our observations multiply, the sphere of the trephine as a preliminary for the removal of brain tumors will be lessened rather than be amplified.

Dr. John Chiene, of Edinburgh, did not take the same depressing view in regard to traumatic epilepsy. He referred to three cases in which decided benefit had followed operation. He agreed fully with what had been said in regard to operation in depressed fracture whether symptoms be present. As regards methods, he spoke of simple measures for locating the fissure of Rolando. The upper extremity may be located by means of a piece of string, being one-half inch behind the middle. The angle may be secured by folding a square piece of paper into four, around one of the angles. Three of these parts will give the proper angle. The purification of the scalp is a difficult matter, but may be accomplished by shaving and soaking with carbolic lotion for three days. For opening the skull he advised as safer than the trephine, the gouge and mallet. For enlarging the opening the gouge forceps fill a useful purpose. For puncturing the dura and the brain he uses a Graefe knife. Hæm-

orrhage from the bone may be checked by plugging with a match; bleeding from the brain by hot water. Stress was laid upon the necessity of constant watching of brain cases and illustrative cases cited.

Dr. W. W. Keen, held that every case of depressed fracture should be operated upon, even in young children; a blow upon the head not sufficient to cause fracture may produce laceration of the dura or of the cortex. In regard to linear fracture, however, he was disposed not to accept the view that operation should be performed. In regard to tapping of the ventricles, he thought that further experience and an improved technique would lead to better results. In epilepsy, he suggested the use of the bromides after operation had been done.

Dr. Charles B. Nancrede, Ann Arbor, reported cases in which cure had followed operation for traumatic epilepsy, in one the cure was of ten years' duration. Often cases that are reported as failures soon after the operation, prove to be cures when followed for a longer time.

Dr. Roswell Park, Buffalo, differed from the author as regards the results of operations for epilepsy. He had himself had cases in which decided benefit was afforded. In order to determine the effect, time must elapse so that the epileptic habit may disappear. The operation removes the anatomical cause, but ordinary therapeutic measures are needed to counteract the secondary conditions. Reference was also made to the relief afforded in brain tumors even where the removal of the growth was not contemplated. He reported two cases of craniotomy for microcephalus in which benefit had followed.

Dr. H. C. Wood, Philadelphia, thought that we should wait before coming to any conclusions as to the result of treatment either medicinal or surgical. He referred to one case in which under medicinal treatment the attacks remained absent for seven years and then returned. He advised that in these cases before the contemplated operation was performed, a mock operation should be done and the effect noted.

Dr. J. J. Putnam, Boston, thought that a simple, smooth, depressed fracture, would not be likely to cause any symptoms; the irritation from a sharp spicula of bone probably will cause inflammation. Probably the most important element in the causation of trouble is the results of the original injury to the cortex. The interstitial changes in the cortex take the form of sclerosis, and it seems *à priori* doubtful that removal of the bone would materially affect it. The operation may not prove indifferent for the cicatrization of the incised parts may lead to harm.

Mr. Thomas Bryant, London, had been much struck with the emphasis with which Professor Agnew had insisted upon the treatment to be followed in depressed fractures. As a practical rule he was disposed to agree with him, but there are certain exceptions; he did not think it wise to encourage practitioners to trephine and elevate every case of depressed fracture. He could recall many cases of depressed fracture, followed for years, in which no symptoms followed. Depression of the lateral aspects of the skull are not so apt to be followed by symptoms as depression of the vault of the skull. From these remarks, he said, it would naturally follow that he disagreed with the observation that in every case of fissure of the skull, operation should be done. He wished Dr. Agnew had gone more thoroughly into the reason for this statement. If there has been no brain symptoms, although the blow may have been sufficient to cause fracture, it would not be wise to insist that we should at once proceed to explore to see if there is fracture. It is better to wait and watch for symptoms, being ready to operate at the first suggestion of anything wrong.

Dr. D. Hayes Agnew: In traumatic epilepsy I did not condemn operation, but curative results should not be expected from it. Its result is only one of amelioration. He could not withdraw his statement made in the paper, for in many of the cases of traumatic epilepsy, there had been no history of unconsciousness or other symptoms. There has been a blow on the head, and, many years later, epilepsy has appeared. It is impossible to determine the condition of the internal table of the skull by inspection of the external table. He had seen a simple crack in the skull with the internal plate forced downwards some distance.

Resection of the Wrist,

a paper by Rafael Lavista, of Mexico City, Mexico, was presented, and read by title.

Report of a Committee on the Results of Treatment of Simple Fracture of the Shaft of the Femur,

read by Stephen Smith, M.D., New York.

At the meeting of the American Surgical Association held May 15, 1890, the following preamble and resolution was adopted.

Whereas, in the treatment of fractures of the shaft of the femur, the question often arises as to what is a satisfactory result in a given case, therefore,

Resolved, that a committee be appointed by the President, to report at the next meeting of the Association, what is their judgment, under the methods of treatment, should be considered as satisfactory results.

The following committee were appointed: Dr. Stephen Smith, New York; Dr. D. Hayes Agnew, Philadelphia; Dr. David W. Cheever, Boston; Dr. D. W. Yandell, Louisville; Dr. Chas. T. Parkes, Chicago; Dr. P. S. Conner, Cincinnati; Dr. Charles B. Nancrede, of Ann Arbor, and Dr. Hunter McGuire, Richmond, Va.

The question referred to your committee has an important bearing upon the jurisprudence of surgical practice. One of the most frequent causes of prosecution of surgeons is the alleged maltreatment of fractures of the femur.

The following circular was sent by the committee to the members, "What should be considered as a satisfactory result (other than perfect union) in the treatment of a simple fracture of the shaft of the femur?" The committee has reviewed the several questions raised and endeavored to secure a common ground on which the Association can take its position, and on which members can individually stand before the courts.

(1) Bony union: The necessity of firm bony union does not admit of discussion. The amount of callus should not be taken as a criterion of the success of treatment.

(2) Relation of long axis of the fragments. While it is the aim of the surgeon to restore the normal relation of the long axis of the fragments, yet it is generally impossible to secure exact apposition of the fracture surfaces, nor can the normal long axial line be restored with mathematical precision.

(3) Correspondence of the anterior surfaces of the

fragments. On this depends the position of the foot. The result of treatment, to be satisfactory, requires that the anterior surfaces be in the same plane.

(4) Length of limb. This was formerly regarded as the test of success of treatment. The records of the past show that shortening was the universal rule. The discovery of the natural discrepancy in the length of the lower limbs has considerably modified our estimate of this test. Ninety per cent. of healthy, uninjured persons have lower limbs of unequal lengths. In 35.8 per cent. the right limb is the longer; in 54.3 per cent. the left is the longer. If the amount of shortening does not exceed the average natural difference in the length of the limbs, namely, about one-half an inch, the result will be in accordance with the laws of nature in the conformation of the lower extremities. If the shortening does not exceed the extreme limit of difference in the lengths of the natural limbs, namely, about one inch, the result should be considered as satisfactory. An unsatisfactory result, as regards shortening, exists only when the amount of shortening exceeds one inch.

(5) Lameness. This is a symptom of variable importance. Some will have a limp with one-fourth inch shortening, while others will not limp with one-half or one inch shortening. In many cases the limp disappears with time, or if it continues it is the result of careless habits of the patient.

(6) Restoration of function. Essential to the function of the femur is strength of the femur at the seat of fracture, free and unimpeded action of the muscles, and proper motion of the knee-joint. The determination of the degree of restoration of function cannot be made for at least one year after cessation of treatment.

(7) Conditional results. There is a class of cases in which our estimate of results must be based upon a careful study of the special circumstances connected with the treatment of each case. Results widely different from those already given, must be regarded as satisfactory when we consider the circumstances under which the treatment is necessarily pursued. The treatment may have been conducted under circumstances in which it was impossible to secure proper apparatus, or the injury may have involved other parts, so as to prevent the patient from taking the necessary position, or the patient may have suffered from delirium or other malady.

The following conclusions were presented. A satisfactory result has been obtained in the treatment of fracture of the shaft of the femur —

(1) When firm bony union exists.

(2) When the long axis of the lower fragment is either directly continuous with that of the upper fragment or the axes are on nearly parallel lines, thus preventing angular deformity.

(3) When the anterior surface of the lower fragment maintains nearly its normal relation to the plane of the upper fragment, thus preventing undue deviation of the foot from its normal position.

(4) When the length of the limb is either exactly equal to that of its fellow, or the degree of shortening falls within the limits found to exist in 90 per cent. of healthy limbs, namely, from one-eighth of an inch to one inch.

(5) When lameness, if present, is not due to more than one inch of shortening.

(6) When the conditions attending the treatment prevent other results than those obtained.

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RESEARCHES ON THE PARASITIC NATURE AND INFECTIOUSNESS OF CANCER.

AT the recent International Congress of Hygiene and Demography, Drs. Shattock and Ballance announced the results of their researches on the infectiousness of cancer. For several years they have been trying to separate by cultures a specific organism from malignant tumors, and by inoculating animals with the product of the cultures to produce cancer. Thus far they have obtained only negative results. They have also transplanted fragments of living cancerous growths into the abdomen, subcutaneous tissue, and muscles of different animals (monkeys, dogs, rats, cats, sheep), but have always failed to communicate any malignant affection.

Concerning the well-known case of Langenbeck, who is said to have produced cancer in a dog from inoculation of juice from a cancer in a man, Virchow is quoted as saying: "I have myself examined the microscopical specimens of the case of lung tumor. They have more the appearances of that form of spontaneous cancer I have myself found in dogs than that of the cancer elements as found in man."

In the case of the animals that were the subjects of Shattock's and Ballance's experiments, it was invariably found that the bits of tumor, if small, were entirely absorbed. Large fragments were found entirely surrounded by an inflammatory capsule; the elements of the tumor presenting simply the lesions of coagulation necrosis. In two cases, an entire scirrhus of the breast had been introduced into the abdominal cavity of a dog, and had disappeared without leaving a trace; the wound had healed without suppuration.

Fragments of scirrhus, of epithelioma, of sarcoma, were grafted into the muscular tissue of monkeys, dogs and other animals, with positively negative results. Two white rats were fed for seven months with fragments of fresh cancerous substance (mammary scirrhus, etc.); during all this time the animals remained healthy, and a subsequent autopsy showed the digestive tube to be free from disease.

At the same meeting, Simon Duplay and Maurice Cazin, of Paris, communicated some researches on the parasitic nature of cancer. The last few years, much importance has been assigned to the presence in epithelial cancers of particular elements considered as of parasitic nature, and as belonging to the group of coccidia. These "characteristic" organisms were described by Dr. William Russell in a lecture read before the Pathological Society of London, December 3, 1890, and published in the *Lancet*, December 13th. It was especially to the study of these elements that the French pathologists devoted themselves in the examination of sixty cases of epithelioma and carcinoma. To verify the assertions of observers who claim to have noted the presence of coccidia in epithelial cancers, it seemed to them necessary to ascertain if the parasites described in these tumors really passed through the principal stages of the evolution of coccidia, an evolution which comprises two distinct periods: (1) A period of growth or of vegetation, during which the parasites present simply an amœboid form; (2) A period of reproduction corresponding to the encysting of the amœboid masses, followed by the formation in the interior of each cyst, of spores which themselves give rise to falsiform bodies destined to take ultimately the amœboid form.

In most of the pavement epitheliomas which they examined, and principally in the lobular pavement epitheliomas with epidermic "globes," they did indeed observe a whole series of figured elements evidently corresponding to the organism mentioned, and which looked much like the encysted parasites, and, in particular, the coccidia during the amœboid period. But in no case after multiplied examinations, could they distinguish any formation which might be regarded as corresponding to the period of reproduction, and hence they could not feel themselves warranted in placing these organisms among the coccidia. They conclude that the figured elements which in their preparations bore so complete a resemblance to coccidia, were the results of a special cellular evolution, which, in the lobular pavement epithelioma is generally in relation with the formation of epidermic globes.

They have, moreover, examined from the same point of view, fifteen cases of carcinoma, and have never met among the different forms of cellular degeneration observed, any figured elements resembling coccidia. As for the *fuchsine bodies* described by Russell as parasites characteristic of cancer, they are to be regarded as simply products of hyaline degeneration, and are to be found, according to Duplay and Cazin, not only in epithelioma, but in various pathological formations that are not malignant.

The Apothecary is the name of a new quarterly journal, published by the Illinois College of Pharmacy, to be devoted to pharmacy, chemistry, botany, materia medica, metrology, and to pharmaceutical education and progress. The first number is dated August, 1891.

MEDICAL INSPECTORS IN THE PUBLIC SCHOOLS.

The spread of contagious diseases, notably diphtheria and scarlet fever, by the congregation of children in the public schools, has been on several occasions forcibly pointed out by Dr. J. H. McCollom, physician to the Boston City Board of Health.[1] In the last annual report of this board it was recommended that a corps of physicians be appointed, so that each school might daily be visited, and any child, suspected of being in the least unwell, might be examined, and in case of suspicion of contagious disease, prompt isolation enforced. Acting on this recommendation, the City Council appropriated $5,000 for this purpose. It was thought that fifty physicians would be required to do the work satisfactorily, and that probably among the younger men in the profession it would not be difficult to find that number who would do the necessary work for perhaps $200 a year.

As the season was then nearly over, the question was laid over by the School Committee until the reopening of the schools, and referred to the Committee on Hygiene. This committee reported adversely at the meeting of the School Committee last week, partly on the grounds that a similar question has arisen before, when the right of the committee to appoint a medical inspector was brought up, and an opinion in the negative given by the City Solicitor. This was in 1877, and again in 1880, on a question of appointing a medical instructor in hygiene. The report of the committee further says:

"Your committee are of the unanimous opinion that under the above-noted opinions of the City Solicitor, the School Committee has no right to appoint a medical inspector for the purposes set forth in the communication from the Board of Health. They feel if they have not the power of appointment, they have not the power to approve the appointments or the plan suggested. Beyond this, the committee feel that it is a serious question in their minds of the benefit really to be derived from this corps of medical inspectors. The natural antipathy of children to be examined by doctors; the strong feeling of parents of their faith in certain physicians; and other reasons which it might be easy to mention, but seem unnecessary, are strong arguments against the proposition made. It seems best to this committee to recommend that the School Board do not approve of the suggestions made by the Board of Health."

The question has been held over two weeks, and will next week come up again in the School Committee.

It surely seems desirable that any practical system which would prevent the schools from being disseminators of disease, should meet with acceptance and support. Possibly some less elaborate system than that suggested would be sufficient. In New York a somewhat similar work is undertaken by an Inspector of Schools and Institutions for Children. This inspector has in charge all sanitary matters relating to schools and institutions for children. He makes daily inspection of these, reporting the unsanitary conditions that are found. The contagious diseases occurring in them receive particular attention. Investigation of the causes of such outbreaks is carefully made, and the isolation of the sick children is supervised by him.

[1] See Journal of August 13, 1891, p. 161.

MEDICAL NOTES.

Influenza.— A severe epidemic of influenza is reported in the Spanish provinces of Caceres, Jaen and Cordova.

The German Congress of Naturalists and Physicians opened at Halle, September 21st. Prof. William His, Professor of Anatomy and Physiology at Leipsic, presided. There were 1,215 delegates present.

Helmholtz Medal. — The contributions to the Helmholtz Testimonial Fund now amounts to 45,000 marks. The interest of this sum will be applied to the foundation of a Helmholtz Medal, to be awarded every two or three years to the young physicist who shall have published the most important work during the interval. Professor Helmholtz himself is to be the first recipient of the medal.

The Study of Cancer. — Professor Adamkiewicz, of Cracow, who has been making researches on the etiology and treatment of cancer, which he thinks likely to lead to important practical results, recently applied to the Austrian Minister of Education for permission to pursue his investigations in a larger clinical field than he can command at Cracow. The Minister has placed the material in the First Surgical Clinic of the Vienna General Hospital at his disposal for the purpose during the next winter semester.

The Illinois Army and Navy Medical Association was organized at Springfield, on June 26, 1890, with Dr. Hosmer A. Johnson, of Chicago, as president, and Dr. John H. Rauch, of Springfield, as secretary. The objects of the Society are the consideration of social, historical and medical subjects connected with the late war. All reputable physicians now living in Illinois, whether in practice or not, who served in the army or navy during the late war, and all who were surgeons or acting assistant surgeons, who were with Illinois troops and are now non-residents of the State, are eligible to membership. At the second meeting of the Association, held in Springfield, on May 18 and 19, 1891, Dr. John H. Rauch was elected president, *vice* Dr. Johnson, deceased, and Dr. Edward P. Bartlett, of Springfield, was elected secretary.

The Association of Military Surgeons of the National Guard of the United States was organized in Chicago, on September 18th, with a membership of about sixty. The object of the Association is to bring together surgeons of the militia of the different States, to meet at fixed intervals, for the consideration of methods of surgery and for mutual improvement. The Secretary of War detailed five surgeons of the regular army to coöperate in the organization. The Association is to meet annually. Thirty-five constitute a quorum. The officers consist of a president, first and second vice-presidents, secretary, corresponding secretary, treasurer and an executive committee of five. The initiation fee was fixed at $5, and yearly dues at $3. The election of officers resulted as follows: President, Surgeon-General Senn; vice-presidents, Major Henry, New York, Colonel Chancellor, of St. Louis; secretary, Colonel Matthews, of Illinois; corresponding secretary, Colonel Chandler, of Wisconsin; treasurer, Colonel Crane, of Denver. The next meeting is to be held in St. Louis.

BOSTON.

Dr. Samuel A. Green has been appointed a member of two advisory councils of the World Congress auxiliary to the World's Columbian Exposition, the Council on Literary Congresses and the Council on a Congress of Librarians.

Meat Inspection.— By an act passed during the last session of Congress, all meat exported from this country must undergo a government inspection at one of the five stations provided for by the Meat Inspection Bill. Four of these are situated in the West — South Omaha, Kansas City, Milwaukee and Chicago. It has been decided to establish the fifth station somewhere in the vicinity of Boston.

NEW YORK.

The Croton Water-Supply. — Commissioner Gilroy, of the Department of Public Works, in a report just made on the Croton water-supply states that an act passed by the Legislature in June, 1890, practically and effectually renders any proceedings under the regulations of the State Board of Health nugatory. "It virtually provides," he says, "that until the city establishes at its own cost a complete sewerage system in the Croton water-shed, and removes or disposes of all sewage and other deleterious matter, and removes all objectionable buildings, nuisances, etc., after compensating the owners for interference with property rights and privileges of every description, no action for violation of the rules and regulations can hold." It being evident, in his opinion, that the powers now vested in the city authorities and the means at the disposal of his department are inadequate to preserve the purity of the water-supply, and, moreover, that no measures can be successfully carried out which do not provide a just and liberal regard for the rights and interests of the inhabitants of the Croton water-shed, he proposes, as the first step to be taken to accomplish the desired object, the acquisition in fee simple of a strip of land not less than 250 feet wide above high-water mark on each side of the principal streams, and around each lake, pond and reservoir tributary to the water-supply, at the points where nuisances now exist. The estimated cost of such a purchase is placed at $1,092,000. He considers as beyond serious discussion the project mooted from time to time of purchasing the entire 360 square miles of water-shed, and driving 25,000 or more inhabitants from their homes.

The Estimate of the Commissioners of Charities and Correction for the year 1892 was filed at the Comptroller's office on September 23d. The appropriation asked for is $2,877,245, as against $2,166,237 for the present year; the increased amount being desired for the construction of new buildings

and other improvements, among which are additions to the insane asylums on Blackwell's, Ward's and Hart's Islands, and improvements at the city farm for the insane at Central Islip, Long Island.

TYPHOID FEVER.— During the week ending September 19th, there were reported 79 cases of typhoid fever, and 19 deaths from the disease. The average number of cases for the corresponding week for the past five years has been about 45.

Miscellany.

A LEGAL DECISION CONCERNING SHIPS' SURGEONS.

IN the case of Mary O'Brien *vs.* The Cunard Steamship Company the Supreme Court of Massachusetts has recently given a decision, which we give in full, as it contains, besides a question of an alleged assault, an opinion on the question of the responsibility of a corporation for the negligence of its medical officers. The plaintiff was one of the steerage passengers on the Catalonia in July, 1889. The decision is as follows:

This case presents two questions: First, whether there was any evidence to warrant the jury in finding that the defendant, by any of its servants or agents, committed an assault on the plaintiff; second, whether there was evidence on which the jury could have found that the defendant was guilty of negligence towards the plaintiff. To sustain the first count, which was an alleged assault, the plaintiff relied on the fact that the surgeon who was employed by the defendant vaccinated her on shipboard while she was on her passage from Queenstown to Boston. On this branch of the case the question is whether there was any evidence that the surgeon used force upon the plaintiff against her will. In determining whether the act was lawful or unlawful, the surgeon's conduct must be considered in connection with the surrounding circumstances. If the plaintiff's behavior was such as to indicate consent on her part, he was justified in his act, whatever her unexpressed feelings may have been. In determining whether she consented, he could be guided only by her overt acts and the manifestations of her feelings.

It is undisputed that at Boston there are strict quarantine regulations in regard to the examination of emigrants, to see that they are protected from small-pox by vaccination, and that only those persons who hold a certificate from the medical officer of the steamship, stating that they are so protected, are permitted to land without detention in quarantine, or vaccination by the port physician. It appears that the defendant is accustomed to have its surgeons vaccinate all emigrants who desire it and who are not protected by previous vaccination, and give them a certificate, which is accepted at quarantine as evidence of their protection. Notices of the regulations at quarantine, and of the willingness of the ship's medical officer to vaccinate such as needed vaccination were posted about the ship in various languages, and on the day when the operation was performed, the surgeon had a right to presume that she and the other women who were vaccinated understood the importance and purpose of vaccination for those who bore no marks to show that they were protected. By the plaintiff's testimony, which in this particular is undisputed, it appears that about two hundred women passengers were assembled below, and she understood from conversation with them that they were to be vaccinated; that she stood about fifteen feet from the surgeon and saw them form in a line and pass in turn before him; that he "examined their arms and passing some of them by, proceeded to vaccinate those that had no mark"; that she did not hear him say anything to any of them; that upon being passed by, they each received a card and went on deck; that when her turn came, she showed him her arm; he looked at it, and said there was no mark, and that she should be vaccinated; that she told him she had been vaccinated before and it left no mark; "that he then said nothing"; "that he should vaccinate her again"; that she held up her arm to be vaccinated; that no one touched her; that she did not tell him she did not want to be vaccinated; and that she took the ticket which he gave her certifying that he had vaccinated her, and used it at quarantine.

She was one of a large number of women who were vaccinated on that occasion without, so far as appears, a word of objection from any of them. They all indicated by their conduct that they desired to avail themselves of the provisions made for their benefit. There was nothing in the conduct of the plaintiff to indicate to the surgeon that she did not wish to obtain a card which would save her from detention at quarantine, and to be vaccinated, if necessary, for that purpose. Viewing his conduct in the light of the surrounding circumstances it was lawful; and there was no evidence tending to show that it was not. The ruling of the court on this part of the case was correct.

The plaintiff contends, that, if it was lawful for the surgeon to vaccinate her, the vaccination was negligently performed. "There was no evidence of want of care or precaution by the defendant in the selection of the surgeon, or in the procuring of the virus or vaccine matter." Unless there was evidence that the surgeon was negligent in performing the operation, and unless the defendant is liable for his negligence, the plaintiff must fail on the second count.

Whether there was any evidence of negligence of the surgeon we need not inquire, for we are of opinion that the defendant is not liable for his want of care in performing surgical operations. The only ground on which it is argued that the defendant is liable for his negligence is that he is a servant engaged in the defendant's business and subject to its control. We think this argument is founded on a mistaken construction of the duty imposed on the defendant by law.

By the fifth section of the Act of Congress of August 2, 1882 (22 U. S. Statutes at Large, 188), it is provided that, "Every steamship or other vessel carrying or bringing emigrant passengers, or passengers other than cabin passengers, exceeding fifty in number, shall carry a duly qualified and competent surgeon or medical practitioner, who shall be rated as such in the ship's articles, and who shall be provided with surgical instruments, medical comforts, and medicines proper and necessary for diseases and accidents incident to sea voyages, and for the proper medical treatment of such passengers during the voyage, and with such articles of food and nourishment as may be proper and necessary for preserving the health of infants and young children, and the services of such surgeon or medical practitioner shall be promptly given in any case of sickness or disease to any of the passengers, or to any infant or young child of any such passengers, who may need his services. For a violation of either of the provisions of this section, the master of the vessel shall be liable to a penalty not exceeding two hundred and fifty dollars."

Under this statute it is the duty of ship-owners to provide a competent surgeon whom the passengers may employ, if they choose, in the business of healing their wounds and curing their diseases. The law does not put the business of treating sick passengers into the charge of common carriers and make them responsible for the proper management of it. The work which the physician or surgeon does in such cases is under the control of the passengers themselves. It is their business, not the business of the carrier. They may employ the ship's surgeon, or some other physician or surgeon who happens to be on board, or they may treat themselves if they are sick, or may go without treatment if they prefer, and if they employ the surgeon they may determine how far they will submit themselves to his directions, and what of his medicines they will take and what reject, and whether they will submit to a surgical operation or take the risk of going without it. The master or owners of the ship cannot interfere in the treatment of the medical officer when he attends a passenger. He is not their servant engaged in their business and subject to their control as to his mode of treatment. They do their whole duty if they employ a duly qualified and competent surgeon and medical practitioner, and supply him with all necessary and proper instruments, medicines and medical comforts, and have him in readiness for such passengers as choose to employ him. This is the whole requirement of the statute of the United States applicable to such cases; and if, by the nature of their undertaking to transport passengers by sea, they are under a liability at the common law to make provision for their passengers in this respect, that liability is no greater. It is quite reasonable that the owners of a steamship used in the transportation of passengers should be required by law to provide a competent person to whom sick passengers can apply for medical treatment, and when they have supplied such a person it would be unreasonable to hold them responsible for all the particulars of his treatment when he is engaged in the business of other persons in regard to which they are powerless to interfere.

The reasons on which it is held in the courts of the United States and of Massachusetts that the owners are liable for the negligence of a pilot in navigating the ship, even though he is appointed by public agencies, and the master has no voice in the selection of him, do not apply to this case. The pilot is engaged in the navigation of the ship, for which, on grounds of public policy, the owners should be held responsible. The business is theirs, and they have certain rights of control in regard to it. They may determine when and how it shall be undertaken, and the master may displace the pilot for certain causes. But in England it has been held that even in such cases the owners are not liable.

The view which we have taken of this branch of the case is fully sustained by a unanimous judgment of the Court of Appeals of New York in Lambheim *vs.* De Koninglyke Stoomboot

Maatschappy 107 N. Y., 228. See also, Secord *vs.* St. Paul Railway, 18 Fed Rep., 221; McDonald *vs.* Massachusetts General Hospital, 120 Mass., 432. We are of opinion that on both parts of the case the rulings at the trial were correct.

SIBERIAN PENAL FLOGGING.

Dr. Benjamin Howard[1] describes a case of legal flogging with the knout at a Russian penal colony on an island off the eastern coast of Siberia, and describes in detail the physical condition of the culprit. This man, who before had been several times a murderer, had recently killed for the sake of a few roubles another convict who, settled on a farm of his own, had become this culprit's benefactor. In the absence of capital punishment, and the impossibility of more distant exile, the only check upon many of the more hardened murderers is the fear of the lash, of which one hundred strokes at a time is the legal maximum.

The convict, aged thirty-two, was examined by the post surgeon in the usual punctilious manner in the presence of the court, the medical examination being imperative, in all cases of flogging, within the same day as that on which the punishment is to be administered. He was thin and anæmic, but there was no evidence of any organic disease or of his being other than in his usual health. Thereupon the sentence was ordered to be duly carried out, and one hundred lashes to be given that day. The culprit, heavily loaded with leg and wrist manacles, guarded by four soldiers was marched back to his cell, and the officials, none of whom seemed to relish the coming duty, took two dinners—one immediately, another two hours afterwards. Directly after the last dinner, the governor and officials in uniform being present, a long pine table about fourteen inches high, was placed in the centre of one of the prison courtyards, upon which, after another slight examination by the surgeon, the culprit placed himself face downwards. There were slits in the top of the table through which straps passed, buckling the culprit to it immovably, his entire back, buttocks, and thighs being bare. The knout, in general shape, was much like the whip used for dog-sledge driving: a short, thick handle of wood, with a thong about twelve feet long. The thong in this case was of stout raw-hide, which for the last four feet was in three tails, the terminal end of each being formed into a stout knot. The official flogger, at the word of command, with great skill brought the three tails with a sharp recoil just upon the buttocks, shouting "One." This was responded to by a sub-officer on the opposite side of the culprit, who also shouted "One," entering the number at the same moment in a book. This form was continued with great care to the end. Until the fifth or sixth stroke the appearance of the parts struck was as if fifteen strips of white paper had been pasted across them, so completely was the blood expelled at the points of contact at each blow. From that time forward blood spattered until the whole surface of the buttocks was covered with it. At the fiftieth stroke the executioner changed sides, so that the two buttocks which alone were struck were made to share the violence equally. Before the fifty-first stroke was commenced the post surgeon felt the patient's pulse, when, had he thought it necessary, he could have had the remaining fifty strokes postponed. During the first twenty or thirty strokes, and until the skin was pretty generally detached, the screams of the patient were all he could make them. They gradually diminished, but were reawakened on the flogger changing sides, until the sixtieth or seventieth stroke, when they subsided entirely into groans. On being unstrapped, the patient was in a cold, clammy sweat, deadly pale, and quivering, but by the help of two soldiers was able to take steps towards the hospital. In the hospital everything had been made ready for the patient's reception, where the wound and himself received as much care as if he had met with an accident for which he was not responsible.

On admission to hospital the pulse was 120 and very weak. The treatment was cold-water dressing and the internal use of stimulants. The appetite, which was naturally very small, was humored as far as the hospital resources would allow, until it grew to be all that could be desired. For about a week the temperature varied slightly, and the pulse was weak. By the third day all the loose shreds of remaining integument and cellular tissue had become gangrenous, for which antiseptic applications were kept applied. By the twelfth day the continuous use of antiseptic poultices had yielded a fairly clean wound. Its area was about fifteen by ten inches; and its depth, which invaded the muscular tissue, varied from half an inch to an inch. It looked much like a wound from an exploded shell. After this date, as the strength of the patient increased, cicatrization proceeded from the margins as fast as could have been hoped for.

The author says in conclusion, that in Russia indifference to death is no distinction; but the terror of the knout is universal, and in places 10,000 miles from the centre of administration this form of punishment is the most prompt, economical, and effective available. From a medical standpoint the physical results of flogging, as he saw it in its various forms in Siberia, disappointed him. In every case the primary shock and also the secondary shock have been less than was expected, and, bearing in mind the alleged former fatality of flogging in the English army, unless those reports were often exaggerations, some of the difference in the after-consequences may be attributed to the difference of position of the culprit during the flogging. In England the culprit was tied up to a post—in Russia, the culprit's head is always lower than the heart and than the part flogged.

[1] Lancet, August 29th.

METEOROLOGICAL RECORD,

For the week ending September 20, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	Rainfall in inches.
S..14	29.93	70	76	64	80	54	67	W.	N.W.	11	12	C.	O.	.04
M..15	30.00	60	68	51	60	63	62	N.W.	S.W.	12	10	C.	O.	
T..16	30.17	64	69	59	76	89	82	N.	E.	3	3	C.	F.	.01
W.17	30.32	65	74	56	74	76	75	N.W.	S.W.	4	11	C.	O.	T.
T..18	30.01	76	90	62	84	66	75	S.W.	S.W.	9	24	C.	F.	
F..19	29.97	68	71	64	70	65	68	N.	S.E.	11	6	F.	C.	
S..20	30.20	65	76	54	73	63	68	N.W.	S.W.	1	12	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 19, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	728	339	25.69	13.87	13.18	2.61	4.39
Chicago	1,099,850	472	226	31.99	5.93	13.98	11.02	3.60
Philadelphia	1,046,964	389	154	22.11	12.85	8.74	4.37	6.17
Brooklyn	806,343	354	211	28.87	10.42	16.31	1.87	5.08
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	182	69	26.88	14 83	14.28	3.85	2.74
Baltimore	434,439	167	76	23.35	9.58	10.18	4.19	4.19
Cincinnati	296,908	98	30	12.24	11.22	2.06	2.04	5.10
Cleveland	262,000	—	—	—	—	—	—	—
New Orleans	242,039	—	—	—	—	—	—	—
Pittsburg	240,000	91	40	29.67	8.79	9.59	8.79	7.69
Milwaukee	240,000	83	46	34 94	13.25	18.07	2.41	6.02
Washington	230,392	124	54	25.00	10.84	6.45	3.22	9.67
Nashville	76,168	26	7	26.92	19.23	15.38	3.84	—
Charleston	65,168	52	17	5.77	17.31	3.84	1.92	—
Portland	36,425	8	1	—	—	—	—	—
Worcester	84,625	28	14	32.14	7.14	32.14	—	—
Lowell	77,696	30	29	40.00	6.66	36.66	—	—
Fall River	74,398	—	—	—	—	—	—	—
Cambridge	70,028	27	12	7.40	—	7.40	—	—
Lynn	55,727	—	—	—	—	—	—	—
Lawrence	44,654	15	4	46.66	—	6.66	6.66	33.33
Springfield	44,179	15	4	26.66	—	13.33	6.66	—
New Bedford	40,733	33	18	24.24	12.12	18.18	3.03	—
Salem	30,801	17	7	23.53	5.88	17.64	5.88	—
Chelsea	27,909	12	7	16.66	25.00	16.66	—	—
Haverhill	27,412	8	4	37.50	12.50	25.00	—	—
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	16	9	31.25	18.75	25.00	—	6.25
Gloucester	24,651	10	5	20.00	10.00	10.00	—	—
Newton	24,379	—	—	—	—	—	—	—
Malden	23,031	8	2	50.00	—	12.50	12.50	12.50
Fitchburg	22,037	10	6	30.00	—	30.00	—	—
Waltham	18,707	5	—	40.00	—	10.00	10.00	—
Pittsfield	17,281	4	—	75.00	25.00	75.00	—	—
Quincy	16,723	5	2	—	—	—	—	—
Newburyport	13,947	9	1	11.11	22.22	—	—	—
Medford	11,079	3	2	—	33.33	—	—	—
Hyde Park	10,193	—	—	—	—	—	—	—
Peabody	10,158	4	2	50.00	—	50.00	—	—

Deaths reported 3,053: under five years of age 1,389; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 790, consumption 339, acute lung diseases 195, diarrhœal diseases 391, diphtheria and croup 140, typhoid fever 133, scarlet fever 44, whooping-cough 27, cerebro-spinal meningitis 20, malarial fever 16, measles 9, erysipelas 5, puerperal diseases 5.

From scarlet fever New York 11, Chicago 8, Philadelphia 7, Brooklyn 9, Baltimore and Pittsburgh 3 each, Cincinnati 2, Malden 1. From cerebro-spinal meningitis New York 4, Chicago 5, Washington 3, Brooklyn 2, Philadelphia, Lowell, New Bedford, Gloucester, Malden and Newburyport 1 each. From whooping-cough New York 5, Milwaukee and Washington 4 each, Chicago, Philadelphia and Baltimore 3 each, Brooklyn and Pittsburgh 2 each, Springfield 1. From malarial fever New York 8, Brooklyn 4, Baltimore and Nashville 2 each. From measles New York 4, Brooklyn 3, Pittsburgh and Milwaukee 1 each. From erysipelas New York 3, Brooklyn and Milwaukee 1 each. From puerperal diseases New York 5.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending September 12th, the death-rate was 17.3. Deaths reported 3,118: acute diseases of the respiratory organs (London) 145, diarrhœa 273, whooping-cough 73, fever 32, measles 27, scarlet fever 27, diphtheria 24.

The death-rates ranged from 10.9 in Huddersfield to 26.2 in Sunderland, Birmingham 15.5, Bradford 19.2, Hull 16.9, Leeds 18.4, Leicester 17.2, Liverpool 22.0, London 15.0, Manchester 21.9, Newcastle-on-Tyne 24.7, Sheffield 19.6.

In Edinburgh —, Glasgow —, Dublin 22.1.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 19, 1891 TO SEPTEMBER 25, 1891.

Assistant Surgeon THEODORE F. DEWITT, U. S. A., granted leave of absence for six months, on surgeon's certificate of disability.

Assistant Surgeon JEFFERSON R. KEAN, U. S. A., granted leave of absence for three months, on surgeon's certificate of disability.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING SEPTEMBER 26, 1891.

E. H. MARSTELLER, passed assistant surgeon, detached from U. S. S. "Petrel," and granted one month's leave.

O. D. NORTON, passed assistant surgeon, detached from special duty, Naval Academy, and to the U. S. S. "Petrel."

J. H. HALL, surgeon, detached from Naval Hospital, Chelsea, Mass., and placed on waiting orders.

G. P. BRADLEY, surgeon, ordered to Naval Hospital, Chelsea, Mass.

C. U. GRAVATT, surgeon, ordered to Naval Hospital, Brooklyn, N. Y.

J. F. GARDNER, passed assistant surgeon, detached from Naval Hospital, New York, and to the Naval Station, New London, Conn.

J. H. NORTH, assistant surgeon, detached from Navy Yard, New York, and wait orders.

GEORGE A. LUNG, assistant surgeon, detached from Naval Station, New London, Conn., and to the Navy Yard, New York.

M. H. SIMONS, surgeon, detached from the "Enterprise," and to hold himself in readiness for sea service.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE SIX WEEKS ENDING SEPTEMBER 19, 1891.

PURVIANCE, GEORGE, surgeon. Granted leave of absence for thirty days. August 22, 1891.

LONG, W. H., surgeon. Granted leave of absence for twenty-two days. August 18, 1891.

AUSTIN, H. W., surgeon. To proceed to Delaware Breakwater Quarantine Station as inspector. August 28, 1891. Granted leave of absence for thirty days. September 3, 1891.

GASSAWAY, J. M., surgeon. Granted leave of absence for ten days. September 19, 1891.

STONER, G. W., surgeon. Granted leave of absence for ten days. August 15, 1891.

CARTER, H. R., passed assistant surgeon. To proceed to Cape Charles Quarantine for temporary duty. August 27, 1891.

WHEELER, W. A., passed assistant surgeon. To proceed to Cape Charles Quarantine for temporary duty. August 27, 1891.

BANKS, C. E., passed assistant surgeon. Granted leave of absence for eleven days. September 3 and 9, 1891.

CARMICHAEL, D. A., passed assistant surgeon. Leave of absence extended thirty days, on account of sickness. September 10, 1891.

GLENNAN, A. H., passed assistant surgeon. Granted leave of absence for seven days. August 29, 1891.

GUITERAS, G. M., assistant surgeon. Relieved from duty at San Francisco, Cal.; to proceed to New Orleans, La., for special duty. September 14, 1891.

WERTENBAKER, C. B., assistant surgeon. Granted leave of absence for thirty days. September 10, 1891.

PERRY, J. C., assistant surgeon. To proceed to Evansville, Ind., for temporary duty. September 18, 1891.

YOUNG, G. B., assistant surgeon. Granted leave of absence for eight days. August 29, 1891. To proceed to Cairo, Ill., for temporary duty. September 15, 1891.

HOUGHTON, E. R., assistant surgeon. To proceed to Vineyard Haven, Mass., for temporary duty. August 29, 1891. Granted leave of absence for sixty days and permission to go abroad. September 18, 1891.

PROMOTION.

GOODWIN, H. T., assistant surgeon. Commissioned as passed assistant surgeon, to date from September 24, 1891. September 18, 1891.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting will be held at the Medical Library, 19 Boylston Place, on Monday, October 5, 1891, at 8 P. M.

Readers: Geo. T. Tuttle, M.D., "Kidney Disease and Insanity"; C. E. Vaughan, M.D., "A Case of General Peritonitis Caused by Chronic Abscess Originating in or near the Gall-Bladder."

JOHN C. MUNRO, M.D., *Secretary*.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the South Carolina Medical Association, Forty-first Annual Meeting, June 9 and 10, 1891.

Clinique Française (Hôpital International) Ecole de Pratique Médico-Chirurgicale. Programme des Cours. Paris. 1891.

Original Articles.

INTESTINAL PERFORATION IN TYPHOID FEVER; ITS PROGNOSIS AND TREATMENT.[1]

BY REGINALD H. FITZ, M.D.,
Shattuck Professor of Pathological Anatomy in Harvard University, and Physician to the Massachusetts General Hospital.

(Concluded from No. 14, page 348.)

THERE remains for consideration another set of cases, several in number, of recovery from peritonitis of sudden onset in typhoid fever following the discharge of pus, offensive or not, by the rectum, vagina or abdominal wall. Food may be present in such pus. Such statements of fact do not necessarily show a primary perforation of the intestine, for the latter may have been caused by the peritonitis, which, in its turn, may have owed its origin to some cause apart from an intestinal lesion.

One of the most marked cases of this sort is that reported by Low.[38] The patient, five years old, during the course of his fever developed a hard, painful swelling at the right of the navel, which burst. Offensive pus was discharged, in which were several orange-colored masses as large as beans. The abscess healed ten days later. To accept this case as evidence of recovery from a typhoid perforation of the bowel, it is necessary to assume, first, that the case was one of typhoid fever, and then that there was a communication with the bowel. Of equal, if not of greater, importance in determining the possibility of recovery after typhoid perforation of the intestine, are the cases of prolonged life after the occurrence of symptoms suggesting a perforation, with the discovery of the latter after death. Buhl's[39] case has already been referred to. Hoffman[40] records the case of a man in whom a bilateral pleurisy arose during the course of typhoid fever, at a time when the abdomen was tense, hard, and occasionally painful. Death took place after an illness of some seven months. Towards the end of this time an abscess pointed in the ileo-cæcal region, and was opened. Fæcal pus eventually escaped. At the post-mortem examination it was found that the ileum was perforated and adherent to the abdominal wall. It opened into an extra-peritoneal fistula, which was continued downwards into the groin, where it opened externally, and upwards through the diaphragm beneath the pleura. Intestinal contents were thus present in the thorax, but not in the pleural cavity.

The similarity of the symptoms of typhoid perforation of the bowel and those of inflammation of the vermiform appendix is striking. Cases of perforating appendicitis have repeatedly been regarded as of typhoid fever, and, as a rule, the symptoms in typhoid fever which suggest a perforation of the bowel are those which, in the absence of typhoid fever, would be regarded as diagnostic of an appendicitis. These symptoms are not merely similar, they are actually identical, even to the usual localization of the consequent peritonitis in the right iliac fossa. However familiar this resemblance may now appear, the only conspicuous mention it has received in medical literature is by Gouronnec.[41] To be sure, he uses the terms typhlitis and perityphlitis without appreciating the prominent part played by the appendix in etiology, and the cases he reports make no mention of the condition of this structure. He[42] "speaks only of ordinary typhlitis occurring in the course of typhoid fever." The tumor is regarded as fæces accumulated in the cæcum in consequence of inflammation of the cæcum. He[43] states that "in many cases the progress of the inflammation of the pericæcal tissue is simultaneous with that of the cæcum, but a pericæcal abscess may sometimes be seen in the absence of an appreciable ulcer of the cæcum."

Despite this extraordinary resemblance between the symptoms of so-called typhoid perforation of the intestine and those of perforating appendicitis, in a research made several years ago, I was enabled to find but three cases of this lesion attributable to typhoid fever. It is well known that the mucous membrane of the appendix contains numerous lymph-follicles, and that in typhoid fever these may become enlarged, necrotic and ulcerated. It is, therefore, noteworthy that but few cases of perforation of the vermiform appendix are recorded in the literature of typhoid fever. Morin[44] finds 12 cases in 64 (18.75%), which he collected from various sources, while Murchison[45] finds it but once in 39 cases. He suggests a doubt as to the nature of the disease in Morin's cases, in consequence of the large number of perforated appendices. Heschl,[46] among 56 cases, finds the appendix perforated in 8 (14.3%). But of 167 cases of perforated bowel in typhoid fever, collected for the purposes of this paper, I find but five cases, a fraction less than 3%, in which the appendix was reported as the seat of the perforation. Such differences may be explained, as suggested by Murchison, on the ground of an incorrect diagnosis during life. But they are quite as likely to be due to overlooking the appendix at the time of the autopsy. Even in the cases of fatal peritonitis in typhoid fever, in which it is stated that no perforation was found, there is no mention of the condition of the appendix.

Recent anatomical evidence is thus lacking of a relatively frequent perforation of the appendix in typhoid fever. Clinical evidence, on the contrary, though perhaps misunderstood, is abundant as to the probable frequency of perforative appendicitis in typhoid fever. The probability of its occurrence furnishes the best solution as to the prognosis of intestinal perforation in the latter disease. Most cases of recovery from symptoms of perforation of the bowel in typhoid fever, are those in which an attack of appendicitis is closest simulated, while the fatal cases of perforation of the bowel in typhoid fever are, in the great majority of instances, those in which other parts of the bowel than the appendix are the seat of the perforation. Hence the prognosis of apparent perforation of the bowel in typhoid fever is to be regarded as the more favorable the more closely the symptoms and course resemble those of an appendicitis.

Such a consideration at once indicates the appropriate treatment for perforation of the intestine in typhoid fever. All indubitable cases of this nature were those in which a post-mortem examination was

[1] Read before the Association of American Physicians, at its Sixth Annual Session, Washington, September 24, 1891.

[38] British Medical Journal, 1881, ii, 122.
[39] Zeitschr. f. Rat. Med., 1857, n. f., viii, 12.
[40] Virchow's Arch., 1868, xlii, 227.
[41] De la Typhlite et Perityphlite dans leurs Rapports avec la Fièvre Typhoïde. Thèse. Paris, 1881.
[42] Loc. cit., p. 9.
[43] Loc. cit., p. 12.
[44] Thèse. Paris, 1869.
[45] Op. cit., 623.
[46] Schmidt's Jahrb., 1853, lxxx, 42. Weiner Zeitschr, 1853, ix, 6.

necessary to make the diagnosis certain. The suggestion of a laparotomy for the relief of a perforated bowel was first made by Leyden[47] in 1884. In the same year Mickulicz[48] reports a successful case of laparotomy and intestinal suture in a patient with ichorous, purulent peritonitis, attributed to a typhoid, perforating ulcer of the small intestine. The patient had a small right inguinal hernia, but thought himself well. He was suddenly seized with a violent pain in the abdomen on leaping out of bed. Symptoms of peritonitis ensued, and at the end of the third day laparotomy was performed for the relief of a supposed intestinal obstruction. A median incision was made, offensive pus, in which were pieces of potato, was evacuated, and a hole was found in that part of the ileum lying above the ilium. The hole was opposite the mesenteric attachment, and was six millimetres long and four millimetres wide. Its edges were sharp, the mucous membrane not everted, and there was nothing abnormal in its vicinity except an increased redness of the intestine. The mesenteric glands were soft and about the size of hazel nuts. Mickulicz excluded the idea of a gangrenous, incarcerated hernia, because the outline of the hole was regular and oval; there were no phenomena of a reactive inflammation in its vicinity, and there was no positive evidence in favor of such a view. He claimed that the seat, size, and absence of other characteristic symptoms, excluded nearly all other than typhoid ulcers; while its position, edges, and the enlarged lymph-glands, were evidence in favor of a typhoid ulcer. Although admitting the force of his argument, there remains a question as to the existence of typhoid fever in this case. Its chief value lies rather in its being a successful case of laparotomy, where a perforation of the ileum away from the mesenteric attachment existed, than as illustrating the value of laparotomy in the treatment of intestinal perforation in typhoid fever.

The first operation for the relief of the symptoms caused by a perforating, typhoid ulcer of the intestine where there is no question as to the nature and seat of the lesion, was performed in 1887, by Lücke.[49] The symptoms suggestive of perforation took place on the eighteenth day of the disease and a laparotomy was performed twelve hours after their onset. The edges of the ulcer were cut out and the hole closed by sutures. The operation lasted some two hours and the patient died a few hours later. The hole in the ileum was about a foot and a half above the valve.

In the same year Bontecou[50] operated upon a case of typhoid perforation thirty-six hours after the onset of its symptoms. The patient died. Morton[51] states that Mr. Bartleet, of Birmingham, had performed a laparotomy in the case of a perforating, typhoid ulcer. Death took place two days after the operation. Although fæces were found in the peritoneal cavity the hole in the intestine was not discovered, nor is the evidence furnished that the case was one of typhoid fever.

At the meeting of the German Surgical Congress in 1888, Frank[52] stated that Hahn had operated on two cases of peritonitis from perforation in typhoid fever, but both patients died. Fürbringer[53] also refers to the fact of Hahn's operations on some of his patients, all of whom quickly died after the operation. He alludes to the successful operation by Wagner. The fullest mention of this case I have been able to find is as follows:[54] "Wagner (Königshutte), in recent years has operated in three cases; first, on a woman convalescing from typhoid fever, for perforation of an intestinal ulcer; eventration of the intestines, irrigation, sutures of the wound without drainage. Recovery."

In 1889, Senn[55] operated upon a patient who was thought to have a volvulus. He had been treated for chronic bronchitis for three weeks during which time he made three visits to Dr. Senn's office. The temperature was never above 101° F. At the end of the third week there was an acute attack of pain in the left iliac region, followed by vomiting which became stercoraceous. Laparotomy was performed at the end of three days. "A number of loops of the upper portion of the ileum were found enlarged twice the size of the remaining portion of distended intestine, rotated on the mesenteric axis one complete turn from left to right." While the over-distended intestine below this point was being withdrawn about a pint of fluid fæces gushed from the left iliac fossa. Perforation was discovered about six inches above the ileo-cæcal valve. The hole was closed by sutures. The operation lasted an hour and death took place in the course of a few hours. Three elliptical ulcers of the ileum were found below the point of perforation.

Bontecou[56] operated upon a patient who was in the sixth week of typhoid fever. Seventeen hours after the onset of symptoms of perforation, a circular hole about one-fifth of an inch in diameter was found in a patch some four or five inches from the ileo-cæcal valve. The hole was closed by sutures, but the patient died after a few hours.

In the *British Medical Journal*[57] is the following extract from a Japanese medical journal: "Kimura, a surgeon in the Japanese navy, records a case in which he performed laparotomy for perforating typhoid ulcer. The patient was a man aged thirty-four. The operation was done twenty-eight hours after the occurrence of perforation when the patient was collapsed and almost moribund. The perforation in the small intestine, about two inches above the cæcum, was of the size of a small pea. The perforated part of the intestine was turned inwards, and ten interrupted Lembert sutures applied. The abdominal cavity was washed out with a warm solution of dilute boracic acid, dried with a sponge; a large, gum-elastic tube was introduced and the wound stitched up and dressed antiseptically. The patient was 'cheerful' for a little time, but died about nine hours and a half after the operation."

Early laparotomy in typhoid perforation of the intestine (with a reasonable doubt as to the existence of typhoid fever in three of the cases) is thus recorded to have been performed ten times. The result was fatal in every case but one, that of Wagner, a complete record of which does not appear to have been published.

The inference is direct that this operation offers but slight hope in the early stages of typhoid perforation of the intestine. A like result occurs when the perforated spot is quickly found as when a couple of hours are demanded for the operation. The lack of

[47] Deutsche Med. Woch., 1884, xvii.
[48] Volkmann's Samml. Klin Vortr., No. 262.
[49] Deutsche Zischr. f. Chir., 1887, xxv, 1.
[50] Journal American Medical Association, 1890, xiv, 455.
[51] Philadelphia Medical News, 1887, ii, 617.
[52] Beil. zum. Cbl. f. Chir., 1888, xxiv, 51.
[53] Berl. Klin. Woch., 1889, xxvi, 667.
[54] Beil. zum. Cbl. f. Chir., 1889, xxix, 66.
[55] Medical News, 1889, liv, 622.
[56] Loc. cit.
[57] British Medical Journal, 1890, ii, 777.

success is best attributed to the condition of the patient at the time, enfeebled as he usually is between the second and fourth weeks of the disease, when the perforation is most likely to take place.

Fatal as the results of this early operation have been in cases of peritonitis from typhoid perforation of the intestine, they have been more successful when a peritoneal abscess has been incised some time after symptoms of suspected perforation have taken place.

Barthélemy [58] records the case of a young soldier, who, at the end of typhoid fever, had a severe, deep-seated pain in the right buttock, extending to the kidney. An abscess was recognized in the iliac and lumbar regions. An opening was made a little above the iliac crest and three litres of pus escaped. The patient recovered.

Escher [59] reports as a case of recovery from supposed intestinal perforation in walking typhoid, one where an abdominal incision was made for the relief of a suspected incarcerated, right inguinal hernia after the third day of abdominal symptoms.

Taylor [60] states that a relapse took place in a patient thought to be convalescing from a severe attack of typhoid fever. The symptoms were more acute and dangerous than at first, and, at one time, there was so much collapse that a perforation was suspected. A tumor then formed between the sternum and navel and was incised four months after the disease began. Three pints of brown, slightly turbid fluid were evacuated. The patient recovered.

Although the reported instances of the successful result of an operation for the cure of circumscribed peritonitis in typhoid fever are comparatively few, I have been able to collect a considerable number in which recovery resulted from resolution or from the spontaneous evacuation of the inflammatory product. In seventeen cases of recovery by resolution, the peritonitic attack began in the second week in one, in the third week in eight, in the fourth week in one, in the fifth week in one, and in the sixth week in two. It began at the end of the fever in one, and during convalescence in three. Recovery took place in a week in one, in two weeks in three, in three weeks in two, in four weeks in one, and in two or three months in three. The length of time necessary for recovery in the remaining cases was not stated.

I find also seventeen cases of the spontaneous discharge of the pus in peritonitis in typhoid fever. Nine patients recovered, seven died, while in one case the result was not stated. The peritonitic symptoms began in the second week in two cases, in the third week in three, in the fourth week in two; in one walking case, in six convalescent cases, and in three during the course of the disease. Death is said to have taken place in six, fourteen and fifteen days, in three weeks, and in two and one-half months after the symptoms began. The pus was discharged into the intestines in thirteen cases; into the vagina in one, through the abdominal wall in two, and at the navel in one.

It appears from this statement that of twenty-seven cases of peritonitis in typhoid fever, whatever may have been the cause of the former, though often attributed to intestinal perforation, three recovered after operation, seventeen after resolution, and nine after the spontaneous discharge of the pus. The comparison of this series of cases with those showing the results of early laparotomy for symptoms suggesting typhoid perforation, would indicate that the appropriate treatment for this complication would be delay until a probably encapsulated exudation proved unduly slow in absorption. An immediate or early laparotomy for the relief of the peritonitis seems advisable only when the patient's condition is exceptionally good. Should the signs of the exudation persist a week or more, and the general condition of the patient permit an incision, surgical treatment would then be strongly advisable. That the patient may live for weeks after perforation has taken place is illustrated by the cases of Buhl and Hoffmann already mentioned.

In brief, immediate laparotomy for the relief of suspected intestinal perforation in typhoid fever is only to be advised in the milder cases of this disease. In all others, evidence of a circumscribed peritonitis should be awaited, and may be expected in the course of a few days. Surgical relief to this condition should then be urged as soon as the strength of the patient will warrant.

[58] Ann. d. chir. franc. et étrang., 1841, Gouronnec. Op. cit.
[59] Wiener Med. Woch., 1887, xxxviii, 607.
[60] Lancet, 1890, i, 961.

ASEPTIC AND ANTISEPTIC DETAILS IN OPERATIVE SURGERY.[1]

BY J. COLLINS WARREN, M.D., OF BOSTON.

In glancing over the abstract of Dr. Gerster's paper, it occurred to me that a presentation of the routine work of some of the hospitals in Boston would be the most useful contribution that I could make to this discussion. I have selected for this purpose the two larger hospitals — the Massachusetts General and the Boston City Hospitals, and a special hospital — the Children's Hospital — which, owing partly to its limited material and partly to the very excellent work done by its hospital staff, is able to produce most satisfactory results. The larger hospitals, which are general hospitals, have such an abundant material, — the City Hospital being supplied from the city of Boston and the Massachusetts Hospital receiving patients from all parts of New England and beyond,— that the surgeons have a much more difficult problem to deal with in endeavoring to maintain a high standard of work. At the Massachusetts General Hospital, particularly on public operating days, the number of operations under ether, performed by Dr. Porter and myself during the winter months, has occasionally been as high as eighteen, and has covered a period of from five to six hours. This requires a large force of assistants and complicated preparations to preserve an aseptic standard.

The new abdominal ward is the feature of the Massachusetts General Hospital where the aseptic system is seen to best advantage, as in the amphitheatre both septic as well as aseptic cases are necessarily operated upon. This ward is entirely separated from the hospital. The patient who is to be operated upon is prepared for the operation in the general ward. The day before the operation the abdomen is shaved, scrubbed with soap and water, then with ether, and finally with corrosive sublimate (1–1000) and a corrosive poultice (1–5000) is applied for the night, and renewed in the morning. A vaginal douche, of corrosive (1–10000) or carbolic acid (1–400) is given also. Some surgeons

[1] Discussion of the paper by A. G. Gerster, M.D., read before the American Surgical Association, Washington, September 23, 1891.

scrub the abdomen with chlorinated soda, ether, and peroxide of hydrogen successively, or with permanganate of potash and oxalic acid before using the corrosive wash. The scrubbing process occupies one hour, and is much complained of by the patients. The patient, at the time appointed for the operation, is carried across an open area to the abdominal ward, where there are separate rooms for each patient and an operating theatre. The latter deserves a word here. The room is lighted at the north end and above by plate-glass. The floor is of asphalt, the walls are of marble and polished brick, and the seats are of slate. A gallery on the sides and over the entrance is allotted to students and visitors. There is no plumbing in this building connected with the sewer. The patient, as soon as convalescent, is transferred to another ward.

Instruments are sterilized for fifteen minutes in the Arnold sterilizer, or boiled according to the desire of the surgeon; after use they are scrubbed with soap and brush to remove whatever may remain upon them. If the instruments are removed from the towel immediately on being taken out of the sterilizer, there is no rusting. At the Children's Hospital they are wrapped in a towel soaked in a solution of glycerine and water (two ounces to the pint) before being placed in the sterilizer, and this is found to prevent all rusting. The ligatures used are of silk or catgut; the silk is sterilized immediately before the operation. Large-eyed or self-threading needles are used, which have been passed through a flame. The catgut is soaked in ether for several days, and is then placed in a solution of corrosive sublimate (1–100) in strong alcohol (95 per cent.). In some cases it is afterwards boiled in alcohol in a closed jar for half an hour, and then preserved in absolute alcohol. Both silk and catgut at all the hospitals are kept upon glass reels or on the small glass spools used at the Johns Hopkins. Silk or silver-wire sutures, double needled, are used for the abdominal wound. They are wrapped in a towel and sterilized. Interrupted sutures are used about two to the inch, and include the peritoneum. Between most of these there are superficial stitches.

The sponges used are made of worsted and gauze, as suggested by Dr. J. W. Elliot, and are of all sizes and shapes. Large flat sea sponges are also used to keep back the intestines. They are sterilized by steam before the operation, and are kept in weak corrosive or boiled water, according to the wish of the operator.

White duck coats are worn by the operator and his assistants. They are usually sterilized, and preserved in bags until the operation. The towels which surround the abdomen and all other towels used are either sterilized or wrung out of corrosive (1–2000).

The dressings are prepared in the ward. Corrosive or plain gauze is cut in strips, and after being folded in a towel is sterilized for half an hour. The wound having been dusted with boracic powder or aristol, the dressing is carried, still in the towel, and adjusted without being touched by the hands. Absorbent cotton is placed outside, and held in place by adhesive plaster and swathe.

In suppurating cases in this hospital small cheap sponges with a large mesh are used. These are kept, one for each day in the week, in stone jars, which hold a carbolic solution (1–20). Each day the sponges are taken out and dried, and before operation are soaked in hot corrosive (1–3000). When it is desired to perform a dry operation, as is frequently the case in amputation of the breast, for instance, absorbent gauze, from which the oil has been removed, is cut and folded in pieces of the desired size, and sterilized in a towel, which is opened at the time of operation.

There is a general tendency at all the hospitals to use as little drainage as possible. The wounds are made as dry as possible before suturing, and buried and quilted stitches are taken when needed to prevent the accumulation of fluids in pockets. In large wounds quill drainage-tubes introduced by Dr. H. H. A. Beach are used by many surgeons. Their thin walls give a large lumen, and their blunt points protect the wound. They are washed, and kept in corrosive (1–1000). These are removed in thirty-six to sixty hours, and the sinus closes quickly where they have been inserted. Bone drainage-tabes are used when the dressing is left undisturbed for one to two weeks. Rubber drains are used in suppurating wounds. They are kept in solution of corrosive (1–1000) or carbolic acid (1–20).

The surgeon's hands are washed first in two sets of soap and water, sometimes dipped in ether, and are afterwards scrubbed in strong corrosive. They are then soaked in a hot solution of weak corrosive, and the nails are thoroughly cleansed with the orange dental-stick (as suggested by Dr. M. H. Richardson).

Brushes used in the abdominal ward are dried after each operation, and are put in corrosive sublimate (1–1000) one-half hour before being used. In the out-patient department a brush attached to a chain is kept constantly in a solution of strong corrosive.

The vagina is prepared for an operation by a douche of four quarts of hot water the day before the operation; and after careful washing on the day of the operation, a douche of corrosive sublimate (1–10000) is used. Sulpho-naphthol or carbolic acid, in a strength of 1–400, is also used. For disinfection of wounds the following solutions are used: Corrosive sublimate, from 1–1000 to 1–10000; carbolic acid, from 1–20 to 1–40; biniodide of mercury; sulpho-naphthol.

At the City Hospital the general arrangements do not differ essentially from those above described. The preparation of the patient's skin is delayed, however, until the day of the operation. In both hospitals the soap poultice is occasionally used the night before the operation. If green soap is used, it must be worked into a lather with chapie, and then applied; otherwise it will blister the skin. A special set of very fine sponges are used for laparotomy. These are washed in very hot corrosive, then in hot water, and are kept in a glass jar in a carbolic solution (1–30).

White linen coats or frocks are worn both at the City and Children's Hospitals, and over these rubber aprons, which are scrubbed in corrosive sublimate.

The sutures are kept in rubber-tubes, which are passed through a diaphragm of rubber placed about midway in a glass jar. Beneath the diaphragm is a corrosive solution, above it is alcohol, in which the needles lie. The needles can be drawn from the jar as the surgeon needs them.

The corrosive and iodoform gauze is prepared in the hospital, cut in small squares when sent to the ward, and kept in tin boxes, from which it is removed with instruments. Dry sterilized gauze is prepared as follows: The gauze is cut in squares, soaked in ten per cent. glycerine and water solution, and heated in the dry oven to 150° C. The presence of the glycerine

prevents the charring of the gauze. Gauze is also sterilized by steam heat, and dipped in strong corrosive before use.

The catgut is prepared in a special way by the apothecary, Mr. Tucker, who has tested his material thus prepared by culture, and found it to be absolutely sterile. The catgut is allowed to stand for twenty-four hours in aniline oil, and is then heated while still in this oil to 115° C. for fifteen minutes. It is then transferred to a ten per cent. solution of glycerine in alcohol until it is soft enough to use, and is transferred to a three to four per cent. solution of glycerine in alcohol so as to render it less slippery.

The results obtained at the Children's Hospital are said to be excellent. The class of operations performed here are for the different forms of surgical tuberculosis and deformities, and also the radical cure of hernia. The organization of the operation and the care of the room is under the personal supervision of a very able sister, who has the necessary scientific knowledge. The instrument tables have slate tops. The operating table has a porcelain dish with slightly raised edges, which drains through a central hole into a pail hung beneath the table. Everything that is used during the operation is sterilized in the Arnold sterilizer. The instruments, being protected by the glycerine from rusting, are left in the towel until it is opened by the surgeon. Sterilized water is used for sponges and hands during the operation.

The patient's skin is usually prepared during etherization. In case of hernia, this is done the night before, soap and ether being used. A corrosive poultice is then left on over night. Before the operation the child's legs are covered with sterilized towels, a rubber dam being placed over them, and held in place with elastic bands. The dam is also placed about the body if necessary. Over the rubber, sterilized towels are laid. Irrigation is used during the operation. The brushes are constantly kept in a solution of corrosive (1–5000). Soap, corrosive and alcohol are used for the hands. The dressings consist of pads of absorbent cotton wrapped in sterilized gauze. These are kept in tin boxes, and are removed with instruments when applied. If pus has been found during the operation, the pads are soaked in corrosive sublimate (1–5000) before being applied. The dressings are not changed for a week or ten days. First intention is expected in abscesses as well as in wounds.

The silk used is boiled fifteen minutes, and kept twenty-four hours in a fifty per cent. solution of corrosive, and is preserved in strong alcohol. The catgut is first scrubbed with yellow soap, allowed to stand in ether forty-eight hours, in corrosive (fifty per cent.) for forty-eight hours, and finally preserved in the following solution:

Corrosive sublimate	gr. xv.
Glycerine	ʒ ibs.
Absolute alcohol.	ʒ xxxi.

This prevents the precipitation of the corrosive. Injection of iodoformized oil into joints and abscesses have not been used for some time at this hospital. They were first employed some ten years ago, but have been largely abandoned.

As will be seen, catgut is still used in all three hospitals, and is also largely employed in private practice, and the method used for preparing it is practically the same, with one or two exceptions.

The following experiment by Brunner, of Zurich, seems to bear ample testimony to the efficiency of the method of preparation. Brunner manufactured gut from the intestine of an animal dead of anthrax. The raw gut thus prepared, when inoculated into animals caused fatal anthrax in all cases. He succeeded in making it aseptic in the following way: The raw catgut was scrubbed in strong soft-soap (Kaliseife), then placed either directly in corrosive sublimate (1–1000) or after leaving it one half-hour in ether. It was preserved finally in the following solution:

Corrosive sublimate	1 part.
Absolute alcohol	900 parts.
Glycerine	100 parts.

As an example of what is done in private operations, I will mention some of the details of the organization of an operation performed in a private house this summer, at which our colleague, Dr. W. W. Keen, was present.

The case was trephining for epilepsy, over the centre for the right shoulder, in a boy eight years of age. The parlor, on the second floor, was selected for the operation. The carpet was taken up; the curtains were removed; the floor was thoroughly scrubbed; and the walls and ceiling were dusted. Three dozen towels, six sheets and five white duck operating coats were sterilized, wrapped in oiled paper, and brought to the house the morning of the operation. My instruments, including the cyrtometer, were sterilized the night before, and placed in a linen bag (devised by Dr. S. J. Mixter), or wrapped in clean sheet-lint taken fresh from the roll. The worsted sponges were also sterilized and wrapped in lint.

The child's head was shaved the afternoon before, washed in soap and water, poulticed a few hours in green soap, and kept over night in a corrosive poultice (about 1–1000). It was scrubbed the last moment before the operation again in corrosive. Cheap nail-brushes made of wood-fibre bristles were used for this purpose. They sell at retail at ten cents apiece, and can be discarded after each operation. The hands were prepared as already stated. The button of bone, removed by the one and one-quarter inch trephine, was kept in a solution of corrosive sublimate (1–10000) in a glass standing in a basin of water of temperature of over 100° F. There were about one dozen fragments removed by the rongeur forceps. Warm boiled-water was allowed to trickle over the exposed brain. The bone was replaced at the conclusion of the operation. No drain was used, but a shred of corrosive gauze was placed between two stitches on the second day, to allow the serum to ooze out. This was removed two days later. The wound healed by first intention.

The dressing used consisted of Linton moist gauze, applied loosely, and held on by pads of absorbent cotton wrapped in the same gauze, and retained by a roller bandage. The catgut which I use for ligatures is prepared by soaking in ether two days. It is then placed in absolute alcohol, and is changed twice. I prefer this to the catgut of commerce as the method of preparation is not disclosed.

It is not always necessary to use sterilized linen in private practice. The best results can be obtained by a free use of towels soaked in hot solutions of corrosive sublimate. On one occasion I happened to have the opportunity to count the wash, and found that I had used five dozen pieces. The case was an extensive dissection in cancer of the breast. The temperature rose to 99° F. on the second night, and after that was normal. Union by first intention.

In regard to the technique of operating, I would urge the importance of avoiding inoculating the freshly dissected surfaces with the products of disease which are removed during the operation. This we are all fully aware of when the case is one of suppuration, but few surgeons realize the necessity of avoiding infection with the products of tuberculosis. The recent experiments in Europe in the inoculation of cancer show clearly that fragments of the growth can be grafted upon the healthy human tissues, and I have little doubt in my mind that many a case of recurrence has been due to want of care in this respect on the part of the operator.

A good deal of bruising is done by the hæmostatic forceps, particularly if the skin is included. Small sloughs form, which, although they do not endanger the wound, delay union somewhat. More care should be employed in their application.

Sealing by collodin is common in Boston as early as the second or third day, even in operations of some magnitude. But this dressing is not used in the hospitals as a primary dressing in laparotomy, or in large wounds like excisions of the breast.

A well circumscribed collection of pus forms an abscess which heals easily after a moderate sized opening, if well washed out at the time of operation. Burrowing pus must, however, be followed relentlessly and without delay. It must be remembered that the exclusion of air favors the growth of anærobic organisms, and that it is only by free cutting that this tendency can be overcome. Multiple incisions should be substituted, if possible, for the enormously long incisions which are coming into fashion. The question of stitch abscess seems to me an important one to settle. This does not appear to depend so much upon the aseptic quality of the thread used as is supposed. Deep stitches are liable to wound large vessels. A stitch hæmatoma increases tension and is liable to infection through the suture sinus from the septic layer of the epidermis above. Tight dressings are often a cause of septic infection. Experimental work in this direction would have a practical value.

Clinical Department.

GYNECOLOGICAL CASES AT THE ST. ELIZABETH'S HOSPITAL.

SERVICE OF F. W. JOHNSON, M.D.

REPORTED BY DR. E. H. ROSS, *House-Officer*.

THE following cases are selected from among those operated on during Dr. Johnson's term of service, December, 1890, to March, 1891. Somewhat over a year ago an in-door department for gynecology was established at St. Elizabeth's Hospital, and put under the charge of four gynecological surgeons. Since then a similar department has been established at the Carney Hospital.

Through the kindness of the corporation and the staff a ward containing twelve beds was put at the disposal of this department, and in conjunction with the other members of the staff it was allowed the use of eight private rooms. The nursing in the gynecological ward is first-class, being under the direct supervision of one of the Sisters of St. Francis who has had extended experience in the care of this class of patients. We have every facility in the way of operating-room, instruments, sterilizers, and assistance, for abdominal work.

Cœliotomy was done seven times; Alexander-Adams operation was done eleven times; carcinoma uteri was operated on twice; electrolysis for uterine fibroid was done twice; one case each of operation for malignant adenoma and laceration of the cervix; one case of imperforate hymen; one operation for complete rupture of the perineum.

All instruments, ligatures, sponges and towels are rendered aseptic by being kept for one-half hour in confined steam. The sterilizer is so made that only as many compartments as are necessary for a particular operation need be used. The greatest care is exercised in securing clean hands and clean finger-nails. After *every* cœliotomy an abdominal supporter of elastic silk is made for each patient. The supporter is worn every day for one year to diminish the liability to hernia.

CASE I. Cœliotomy: Removal of abscess of left ovary.

A. T., single, twenty-nine years of age, entered the out patient department with a history of pain in right ovarian region for seven years, and occasional pain in left ovarian region. Unable to work. Menstruation began at fourteen. Flows one day every four weeks. Flows but little. Confined to bed during menstrual periods. Frequent headaches. A diagnosis was made of retroversion with adhesion, and right salpingitis. She was treated at intervals in the out-patient department until August 8th, when she entered the hospital.

August 16th. Evidence of quite extensive inflammation about the uterus was present, From this time until December 1st she was under constant treatment in the hospital; rest in bed, iodine, hot douches and packing having been faithfully tried.

December 1st. Examination found a retroflexed adherent uterus with a mass as large as a hen's egg to the right of the uterus and apparently adherent to it.

December 6th. Examined under ether by Drs. Johnson and Conant. A tumor as large as a small orange was found to the right of the uterus and seemed to be in the right broad ligament. The left ovary as large as an English walnut was prolapsed down beside the uterus.

December 13th. Cœliotomy was performed by Dr. Johnson, assisted by Drs. Conant and Burrage. Dr. Burrage, under whose care she had been in the out-patient department, felt quite sure an enlarged tube would be found on the right side. The right tube was found distended almost to bursting, and in separating the adhesions it ruptured, allowing something less than one-half pint of thin, clear fluid to escape into the abdominal cavity. On the left side the ovary had been converted into an abscess and was everywhere adherent. While freeing it from adhesions it ruptured, and about two ounces of very foul-smelling pus escaped into the peritoneal cavity. The abscess walls were ligated off, and the mass removed.

Dr. W. F. Whitney reported: "The specimen which I received from you on Saturday I am inclined to think is ovarian rather than tubal; but shall have to wait a day or so longer before sending the final report, until I can make some good sections from the hardened specimen. The examination of the hardened specimen received from you Saturday shows it to be a multilocular cystic tumor, the size of a large plum. The external surface in places is slightly corrugated, recalling

the appearance of the surface of an ovary. The inner lining of the cysts is quite smooth. Microscopic examination of the hardened specimen shows a fibrous wall rich in cells, with large and tortuous vessels, and with here and there fibrous centres similar in character to those following menstruation. The specimen, I think, is an ovary."

After thoroughly irrigating the abdominal cavity with hot boiled-water, and inserting a drainage-tube at lower angle of incision, the wound was closed. Drainage-tube removed on the fourth day. Within twenty-four hours after the operation it was evident that the skin and subjacent tissues over the lower part of the back would slough. The healing of the bed-sore kept her in the hospital until January 30th.

March 18th. Reported herself as perfectly well. Has menstruated regularly every four weeks. Duration and amount of flow same as before the operation.

Case II. Cœliotomy: cystoma of ovary, chronic peritonitis.

B. G., single, thirty-four years of age, entered the hospital December 15th. Grandfather died of cancer. Five years ago had an attack of pelvic inflammation, which was followed by an abscess which discharged through the vagina. One year later had a severe attack of peritonitis. Six years ago was told she had an ovarian tumor on the left side. Constant, severe abdominal pain confining her to bed most of the time for the past few weeks. Since last May has been unwell every two to three weeks. Flows six to eight days, and saturates ten to twelve napkins. Severe dysmenorrhœa, confining her to bed and requiring morphine for its relief; frequent headache; poor appetite: constipation; painful micturation, with more or less tenesmus.

December 17th. Examined, under ether, by Drs. Johnson, Kingman and Conant. The uterus was found well to the left, and on the right there was a fluctuating tumor reaching above the umbilicus, and extending along the median line to the left. It bulged into Douglas's cul-de-sac, feeling like a so-called pelvic abscess.

December 20th. Cœliotomy. Dr. Conant assisted. Dr. John G. Blake was present. Abdominal walls very vascular. Dr. Conant, under such a condition of affairs, has observed that adhesions are usually present, and that there is increased vascularity within the abdominal cavity. The cyst was adherent to right parietal peritoneum, and in front and on the left side its wall was covered by adherent omentum and mesentery. An attempt was made to free these adhesions, but the hæmorrhage was so severe, after going a short way, that it was abandoned, and the cyst, having been emptied of two quarts of thick, chocolate-colored fluid, was stitched to the abdominal opening, and drainage-tube inserted. The wall of the cyst was at least one half-inch in thickness. The cyst was washed out twice each day.

December 27th. Discharge from sac sweet, but cavity contained only five drachms of water when filled. This showed that part of the cyst must have been shut off by adhesion of the walls, and the cavity that was closing up was only a small portion of the original cyst.

January 6th. An attack of peritonitis on left side of abdomen. Vomiting, with great pain, for several days.

January 7th. Bulging of abdomen on the left side, just below the umbilicus.

January 17th. Abdomen opened for exploration. Dr. Conant assisted. Incision opened directly into a cavity containing about a quart of bloody serum and pus. This was found to be a part of the old cyst that had been shut off from the first opening and pulled by adhesions over to the left. The cavity was washed out, and drainage-tube inserted. The cavity was washed out twice every day, and by March 1st it was entirely obliterated. Hydrogen peroxide was freely used in this case, and worked admirably. Although still in the hospital, she is up and about, makes her bed, and goes over the stairs. The abdomen is as soft as in the normal condition.

Case III. Cœliotomy: chronic salpingitis and peritonitis.

S. H., single, twenty-four years of age, entered the hospital December 15th. Five years ago fell down stairs. The accident was followed by severe backache. A retroversion was found at that time. After packing for some weeks the uterus was replaced, and a pessary was worn for two years. Two years ago had an abortion performed. This was followed by an attack of peritonitis, and since then she has had more or less pelvic trouble. For ten days previous to entering the hospital she had been suffering from an attack of peritonitis on the right side of the pelvis.

On examination, under ether, by Drs. Conant and Johnson, a mass as large as a small cocoanut was found in the right side of the pelvis, and felt exactly like an intra-ligamentous cyst. There was no bulging into the vagina. Aspiration resulted in the withdrawal of a clear, serous fluid. In thirteen days the mass on the right side had entirely disappeared. Discharged.

February 26th. Entered the hospital for removal of tubes and ovaries. It was decided to leave the left ovary and tube if they were found healthy.

February 28th. Cœliotomy. Dr. Conant assisted. Abdominal walls were very vascular. Adhesions were found on entering the abdomen bridging over the pelvic cavity in every direction. On the right side the tube and ovary were so firmly imbedded that it seemed best to leave that side alone. On the left side the tube and ovary were removed after a great deal of trouble in separating adhesions from mesentery and omentum. Great difficulty was experienced in stopping bleeding from mesentery, which was of a dark angry-looking color.

Dr. W. F. Whitney reported as follows: "The specimen from the case of S. H. consisted of the ovary and a portion of the tube. The former was of normal size, surface whitish and opaque, and on section numerous small cysts with clear contents were found. The tube was of normal size, slightly tortuous, and covered with adhesions, which passed over on to the ovary. The interior of the tube showed no marked change. The diagnosis is chronic peritonitis and retention cysts of the ovary."

Drainage-tube was inserted and left in thirty-six hours. During the first six hours seven drachms of bloody serum were sucked from the tube, after that only clear serum was obtained. Within eight hours after removal of the tube both temperature and pulse went up, and it was feared that it had been removed too soon. Whiskey was immediately given by the rectum in large doses, and one drachm of sulphate of magnesia was given by the mouth every half-hour. In a few hours the bowels began to move, and in all moved seven times. At once temperature and pulse

dropped, and convalescence was uneventful. Wound healed perfectly.

March 25th. Menstruation has not returned.

CASE IV. Cœliotomy: Intra-ligamentous cysto-adenoma.

J. G., married, twenty-nine years of age, entered the hospital January 9th. Amenorrhœa for two and a half years. For two weeks before entering the hospital she had had severe pain in the right ovarian region.

January 15th. Operation. Dr. Burrage assisted. A cyst of the right ovary about the size of a large orange, was found growing between the layers of the broad ligament. After separating the layers of the broad ligament the cyst was found to be so adherent that it could not be removed. After emptying it the walls were sewed to the abdominal incision, and a drainage-tube inserted. Within thirty-six hours the pulse was 128 and the temperature 101.8°. No flatus had been passed. Abdomen distended, and patient very restless. I well knew what this meant, and no time was lost in giving twelve ounces of liquid citrate of magnesia, with repeated enemas of turpentine and water. The paralysis of the intestine once overcome, the septic peritonitis would disappear like smoke. Next day bowels had not moved; pulse 120, temperature 101°. Twelve ounces of liquid citrate of magnesia were given, and repeated in four hours. During the day, in addition to two ounces of sulphate of magnesia, sixteen grains of calomel were given. Stercoraceous vomiting was present. In the evening the bowels began to move, and kept moving most all night. Next morning the temperature was normal. For fifteen days the pulse was quite high, due to the presence of the tube as has repeatedly been seen in such cases. On the sixth day the sutures were removed. Union was perfect down to drainage-tube. Seven days after the operation salivation appeared. The gums became swollen and soft, the teeth loosened and the mouth was very sore. It was all of six weeks before the mouth was well. Eighteen days after the operation the cyst had closed so that the tube was pushed out. Excellent results were obtained from the use of peroxide of hydrogen. In five weeks after the operation she was up and about.

March 11th. Discharged at own request. A sinus one inch in depth and the size of a knitting needle still remained in the lower angle of the scar where the tube had been.

April 18th. Sinus almost closed.

September, 1891. Six silk sutures were discharged through this sinus, and then it closed.

CASE V. Cœliotomy: Chronic peritonitis.

M. E. M., single, twenty-four years of age, entered the hospital January 12th. Phthisical family history. Four years ago had pleurisy with effusion. Has constant severe pain in lower abdomen, requiring several injections of morphine almost daily. Appetite poor. Bowels constipated. Between four and five years ago consulted a physician for menorrhagia, and an application was made inside the uterus at the first visit. From that she had leucorrhœa, never any before. Soon after consulted another physician for menorrhagia. Electricity was used, and one electrode was passed inside the uterus. Within forty-eight hours after the first application of electricity peritonitis ensued. In July, 1889, had another attack of peritonitis. In February, 1890, had another attack. During this attack was seen by Dr. R. H. Fitz, and it was his opinion that the peritonitis was of tubal origin. The three attacks were severe. Since the last attack she has been confined to the bed most of the time.

Up to the attack of peritonitis in 1890, menstruated every two to three weeks with profuse flow. Since then has flowed every five to seven weeks, but the amount has been excessive. Has severe abdominal pain one to two days before, and first two days of the flow. She had seen seventeen physicians since the first attack of peritonitis. Ten had advised against, and seven for an operation. Dr. Johnson saw her in consultation with Dr. H. L. Smith, a few months after the third attack of peritonitis. Under ether, the left ovary and tube were found down behind the broad ligament and adherent.

January 14th. Operation. Dr. Conant assisted. Dr. H. L. Smith was present. Both ovaries and tubes were removed. The right ovary and tube, this was the side on which the attack of peritonitis began in February, 1890, were adherent to omentum, mesentery and broad ligament. The left ovary and tube were adherent to omentum and broad ligament. In four days the morphia was stopped and she has taken none since.

Report of Dr. W. F. Whitney, on both ovaries and Fallopian tubes: "Both presented similar appearances although one was rather more marked than the other. The surface was covered by relatively firm fibrous adhesions binding tubes and ovaries together, and completely obliterating the free end of the tubes. The tissue was in general injected with blood. Both tubes were dilated, one much more so than the other. There was a slight hæmorrhage into the opening of the tubes with a thickening of the membrane and in places slight granulation tissue. The walls of the tubes were infiltrated with small, round cells. The ovaries contained numerous small retention cysts, but otherwise did not present any abnormal appearance. The diagnosis is chronic peritonitis and salpingitis."

Convalescence was without a drawback. Two months after the operation there had been no return of the abdominal pain. From March 15th she flowed nine days and soaked twenty-four napkins. She was told that the flowing was probably due to hyperplastic endometritis. This condition has been observed in a few cases after removal of tubes and ovaries for chronic peritonitis, coming on a few months after the abdominal operation. Curetting with the application of nitric acid cures the disease.

CASE VI. Cœliotomy: chronic peritonitis.

L. T. W., single, thirty-four years of age, entered the hospital January 31st. For the last fifteen years has had poor health. Severe headache and backache. Backache has been the chief trouble. Dysmenorrhœa has been intense for the last four or five years. For the past four or five months the pain has been most marked two days before the flow, continuing with severity throughout. Menstruates regularly every four weeks; flows four to five days; saturates six to eight napkins. Has been able to get out but little during the past year, and has suffered an "immense amount of pain." Poor appetite. Bowels constipated.

February 2d. Operation. Dr. J. W. Elliot was present in consultation, Dr. Conant assisted, Dr. F. F. Whittier was present. After the abdominal cavity had been opened, Dr. Elliot examined the pelvic organs,

and agreed with Dr. Johnson that both ovaries and tubes should be removed. The right ovary was in a pocket formed by adhesions between the right tube and peritoneum covering the posterior surface of the right broad ligament. Left ovary and tube prolapsed into Douglas pouch and adherent.

Dr. W. F. Whitney's report: "Ovaries and tubes varied somewhat in size, the one being a third larger than the other. The surface was smooth, whitish opaque, and here and there were small cysts, with thin, clear, fluid contents to be seen shining through. Upon section, the outer fibrous layer was found to be slightly thickened, and in the cortical layer were relatively few Graafian follicles to be seen. The organ was filled in all directions by numerous white, convoluted cicatrices, and there were numerous smooth-walled cysts varying from the size of a pin's head to a large pea. There were evidences of chronic peritonitis in the form of slight adhesions. It has also suggested itself to me that the swelling of the ovary at the menstrual period may in some way cause pressure on the nerves in the centre, where there are numerous cysts and a thickening of the external fibrous coat."

Convalescence was without a drawback.

Case VII. Cœliotomy: chronic peritonitis.

A. B. W., single, twenty-six years of age, entered the hospital February 23d. Phthisical family history. Menstruation began at fifteen. Regular up to one year ago, since then has been unwell every twenty-one to twenty-three days. Formerly flowed seven, now flows five days. Severe pain in the lower abdomen first three days of the flow. Unable to exert herself but little, or to do any work, on account of the severe abdominal pains. During the past eighteen months has had several quite severe uterine hæmorrhages, brought on by over-exertion. Eighteen months ago had a severe attack of peritonitis. It was three months before she was out of the house. This evidently was the starting point of the severe pelvic troubles.

February 25th. Operation. Dr. Conant assisted, Dr. Bundy was present. On the left side, the ovary and tube were found adherent to the mesentery. On the right, the ovary was found in a cavity bridged over with adhesions, and it was necessary to dig it out with the index-finger. Both tubes and ovaries were removed.

Dr. W. F. Whitney's report: "Specimen from the case of A. B. W. consisted of ovaries and tubes. The former were of normal size, surface smooth, and in no way presented any marked deviation from the normal. The tubes were about normal size; one was slightly larger than the other and a little tortuous. The surfaces of both were covered with thin, highly vascularized adhesions; the fimbriated extremity of one was entirely closed by adhesions, and that of the other partially so. The mucous membrane was slightly thickened and folded, otherwise not abnormal. The changes seem all to be those of a chronic peritonitis."

Sutures removed on the seventh day. Union perfect. Eleven days after the operation a small superficial abscess appeared in the line of incision. With this exception convalescence was uninterrupted.

(To be continued.)

The Algerian Council of War has recently condemned a soldier to death for having struck on the face the surgeon of his regiment who had refused to place him on the sick list.

A CASE OF DERMATITIS IODOFORMI.

BY ALBERT H. TUTTLE, M.D., CAMBRIDGE, MASS.

Mrs. R., sixty years of age, and a Bavarian by birth, while acting in the capacity of nurse, used iodoform very freely. Within twenty-four hours from the time of its use, a fine eruption consisting of macules, papules and vesicles took place over those parts of the body exposed to the air, namely, the face, neck, hands and wrists.

Soon a diffuse redness united all the lesions, and there was considerable œdema in the parts, more especially the eyelids and back of the hands. The conjunctiva was intensely congested.

The eruption appeared simultaneously in all the parts exposed, but was most severe on the hands and between the fingers, where the contact with the drug was greatest. There was no apparent abrasion of the skin anywhere, through which absorption could have taken place.

Between the fingers the vesicles, which for most part were about one-eighth of an inch in diameter, became more plentiful, in many places becoming confluent, after which the superficial epithelium came away as light colored masses, leaving a red oozing surface behind.

On the fifth day there was some headache, and the urine was tested with nitric acid for iodine, but the result was negative.

Itching was a prominent symptom, and exfoliation of the epidermis occurred over the back of the hands. By using a borax solution for the eyes and carbolized cosmoline on the skin, resolution was rapidly established, during the course of which several large red blotches appeared on the palm of the hands.

The course of the trouble, which was somewhat protracted by the continued exposure of the patient to iodoform during the beginning, was about ten days. The inflammation grew rapidly worse, until recognizing iodoform as the cause of the trouble, its use was discontinued.

On questioning the patient, I found that twice before she had suffered from similar attacks after exposure to iodoform in the treatment of her patients.

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

ON THE EFFECT OF THE DIVISION OF CERTAIN CONSTITUENTS OF THE SPERMATIC CORD IN THE RADICAL CURE OF VARICOCELE AND OTHER OPERATIONS UPON THE VITALITY OF THE TESTICLE.

Dr. Wm. H. Bennet has contributed an article of considerable interest regarding the cure of varicocele.[1] The principal points to which Dr. Bennet wishes to call attention may be summed up in the following conclusions, which, of course, are very different from what is commonly taught, but which he believes are perfectly sound:

(1) That the vas deferens having been displaced in the manner usually adopted in operations for varicocele, the spermatic artery does not accompany it, but remains with the spermatic veins. (2) That in cases

[1] Lancet, March 7, 1891, p. 532.

of varicocele the division of the main trunk of the spermatic artery, together with the veins, if the ordinary principles of surgical cleanliness be observed, is not only harmless to the testicle, but probably aids in the ultimate relief of the affection by diminishing the pressure of blood going to the testis at the time when almost all the returning veins are suddenly obliterated. (3) That the division of the vas deferens, spermatic artery, and spermatic veins, which entails a section of apparently the whole cord, is not necessarily followed by sloughing, or even subsequent wasting of the testicle, provided that a perfectly aseptic condition of the wound is maintained.

EXCISION OF THE GASSERIAN GANGLION.

William Rose,[2] records a case of removal of the Gasserian ganglion for acute neuralgia, first affecting the inferior division of the fifth nerve, for which he stretched the inferior dental nerve and divided its mental branches, giving temporary relief. The trouble continued, and later he trephined the lower jaw and cut away a piece of the nerve trunk. This produced only temporary relief. A year later the pain returned, and in addition there was severe pain in the right side of the tongue indicating the extension of the trouble to the lingual nerve. He then cut down upon the inferior dental and lingual nerves in the pterygoid region, but this was not satisfactory. Finally the pain returned and implicated the alveolar border of the right upper maxilla and extended to the vertex of the head, showing that the superior maxillary division of the fifth nerve was involved. In accordance with a suggestion of Dr. Ferrier he decided to remove the Gasserian ganglion. This operation he performed in the following manner:

He first removed the upper maxilla in the usual way, and then inserted the pin of a half-inch trephine into the foramen ovale and removed a ring of bone. He then caught sight of the Gasserian ganglion on the petrous bone, passed an aneurism needle gently beneath it without injuring the dura. The patient suffered somewhat from the shock, but on the following day her condition was satisfactory. She, however, complained of heat and pain at the back of the right eye-ball, which was very congested, this increased and resulted in panophthalmitis, necessitating the removal of the eye. Her progress in all other respects was very satisfactory. The neuralgia entirely ceased and had not since returned. He thought that in future, when it was necessary to remove the ganglion, this might perhaps be accomplished without removing the jaw. He extremely regretted the loss of the eye, and was disposed to regard it as accidental and not as a necessary result of the operation.[3]

TRANSPLANTATION OF MUCOUS MEMBRANE.

The experimental works of E. Djatschenko has contributed the following data to our knowledge in this subject.[4]

The superabundant fat-tissue from the under side of the transplanted piece must be removed with scissors; still all the sub-mucous cellular tissue must not be cut away, or the conditions for the re-establishment of the blood-circulation in the transplanted piece are less favorable. The piece must lie firmly and intimately against its new base; to this end hæmorrhage must be stopped, the clotted blood carefully removed, and the transplanted piece sufficiently pressed against the wound surface. Before transplantation, the piece must be washed off in a warm (37° to 38° C.) six per cent. salt solution. Soaking in this solution for not over one and a half hours will not act injuriously.

The operation should be aseptic, but neither the transplanted piece nor the wound surface should be exposed to the use of strong antiseptic solutions. The transplanted piece must be protected from dessication, and it should, if possible, cover the whole wound surface, as the uncovered portion becomes a scar.

THE FINAL RESULT OF LIGATION OF THE AFFERENT ARTERIES IN ENLARGED THYROIDS.

Professor Rydygier, in Krakau, has treated twenty-one patients suffering from thyroidal disease, by the above method, as introduced and advocated by Wölfler, and has from his personal experience published the following conclusions:[5]

Unilateral ligation of the thyroid arteries is uncertain and insufficient in a majority of cases. Still less successful is the ligation of both superior or of both inferior arteries. Kocher's proposition to ligate the vessels of the opposite side when unilateral ligation has been found unsuccessful, is also unsatisfactory, since the interval between the operations permits the development of collateral circulation to prevent the desired effect. The unilateral ligation is inefficient in fibrous and cystic thyroids. The best results were obtained with medium-sized recent parenchymatous thyroids where the gland tissue was not at all or only slightly degenerated. These were much diminished in ize and sometimes returned to normal size. Especially successful were the cases of very vascular tumors. The sequelæ of total extirpation of the thyroid have not been seen after arterial ligation, for as much tissue remains after the diminution in size of the gland, as after bilateral resection.

The writer's report concludes with the histories of his twenty-one cases.

A NEW OPERATION FOR SPASMODIC WRY-NECK, NAMELY, DIVISION OR EXSECTION OF THE NERVES SUPPLYING THE POSTERIOR ROTATOR MUSCLES OF THE HEAD.

W. W. Keen, M.D., has devised and performed the following operation in view of the implication of the posterior muscles of the neck which rotate the head in cases of spasmodic torticollis.[6] The operation consists of the following steps:

First Step.— The field of operation having been shaved and disinfected, make a transverse incision about half an inch below the level of the lobule of the ear, from the middle line of the neck posteriorly, or even slightly overlapping the middle. This incision should be two and a half to three inches long.

Second Step.— Divide the trapezius transversely.

Third Step.— Dissect up to the trapezius and find the occipitalis major nerve as it emerges from the complexus and enters the trapezius. In the complexus is an intra-muscular aponeurosis. The nerve emerges from the complexus at a point between this aponeurosis and the middle line, usually about a half inch below the incision, but sometimes higher up, and then enters the trapezius. It is always a large nerve of the

[2] British Medical Journal, Nov. 1, 1890.
[3] Annals of Surgery, February, 1891, p. 132.
[4] Annals of Surgery, 1891, xiv, 127.
[5] Arch. f. Klin. Chir., 1890, xl, 4, p. 806.
[6] Annals of Surgery, January, 1891, p. 44.

size of a stout piece of catgut, and it is easily found if sought for at the right place.

Fourth Step.— Divide the complexus transversely at the level of the nerve. This division should be made by repeated small cuts, so as not to cut the nerve which is our guide, after which dissect the nerve still further down from the anterior surface of the complexus, where it arises from the posterior division of the second cervical. Cut, or better, exsect a portion of the posterior division before the occipitalis major arises from it, so as to catch the filament to the inferior oblique muscle. This divides the *second cervical.*

Fifth Step.— Recognize the inferior oblique muscle by following the sub-occipital nerve towards the spine. The nerve passes immediately below the border of the muscle.

Sixth Step. — Recognize the sub-occipital triangle formed by the two oblique muscles and the rectus capitis posticus major. In this triangle lies the sub-occipital close to the occiput. It should be traced down to the spine itself, and be divided, or better, exsected. This divides the *first cervical.*

Seventh Step.— An inch lower down than the occipitalis major, and under the complexus, is the external branch of the posterior division of the third cervical to the splenius. When found it is to be divided or exsected close to the bifurcation of the main trunk. This divides the *third cervical.*

A drainage-tube and horse hairs are to be inserted, and as the patient lies on the back, although the wound is very deep, the condition is most favorable for good drainage. If desired, the posterior muscles can be united by buried sutures, independently of those in the skin. The after-treatment is the same as for ordinary operations.

AN IDEAL CHOLECYSTOTOMY IN TWO STAGES.

In order to avoid the undesirable sequelæ of the usual operation, namely, fistulæ, Wölfler has modified the operation with a satisfactory result, by opening the gall-bladder extra-peritoneally in the usual way; then the bladder is sutured, and when healed finally, is dissected from its attachments, dropped into the abdominal cavity, and the opening in the abdominal wall closed by suture, as in a laparotomy. Senger is reported as having operated in a similar manner in one case.[7]

CONTUSIONS OF THE ABDOMEN.

M. Moty[8] has made a careful study of contusions of the abdomen with special reference to injuries from horse-kicks.

He divides the cases into three classes: the light, the medium and the grave. In the first class he includes contusions in which the intestines and other important organs have escaped injury, and is diagnosticated by the progressive disappearance of the symptoms of the shock, and the absence of signs of perforation and extravasation. The second class includes those cases which present some complication, as acute general peritonitis, rupture of a large vessel or of important viscera, and require treatment for from two to three weeks. The third class includes those where a rupture or extensive laceration of the intestines has taken place. The prognosis in all these cases should always be reserved for several weeks on account of the possibility of the development of peritonitis.

[7] Schmidt's Jahrb. des gesammt Med., 1891, Bd. 229, p. 184.
[8] Revue de Chirurgie, No. 11, 1890, p. 978.

He arrives at the following conclusions:

(1) Horse-kicks of the abdomen in many cases produce grave lesions of the intestines.

(2) These lesions are perforations produced in three ways: by rupture, by crushing, and by laceration.

(3) The diagnosis of perforation can often be established by the acute pains resulting after the injection of fluid.

(4) Large perforations and ruptures demand laparotomy and intestinal suture.

(5) This operation may be successfully performed notwithstanding the presence of peritonitis.

(6) Exploratory laparotomy for diagnosis is not permissible. The expectant plan of treatment is always indicated in case of doubt.

(7) The prognosis of contusion of the abdomen should be reserved for a month, in view of the complications which may result.

THE TREATMENT OF PENETRATING GUNSHOT WOUNDS OF THE ABDOMEN.

This is a subject which is still open to discussion, and William B. Coley,[9] has contributed an extremely interesting and valuable article on this subject. In one sense it is an answer to an article by M. Reclus and M. Nogués in the *Revue de Chirurgie* of February, 1890, which makes a vigorous attack upon the so-called American method of treating gunshot wounds of the abdomen, and advocates their treatment by the old "laissez-faire" principle.

Dr. Coley has collected 165 cases treated by laparotomy, and has made a careful analysis of the cases. He considers the value of the so called infallible hydrogen gas test, and notes the following objections to the test: (1) The test is not an "infallible" index of the condition of the alimentary canal. (2) The danger of producing infection of the peritoneal cavity. (3) It shows nothing as to the condition of other viscera, wounds of which "frequently" demand operative interference. (4) It prolongs the operation, interferes with respiration; adds to the shock. (5) It increases the liability of the sutured wounds to give way.

Of the total number, 165, there were 54 recoveries and 111 deaths, giving a mortality of 67.2 per cent. Of this number there were 81 cases of wounds of the "small" intestine, with 25 recoveries, or a mortality of 67.5 per cent; 24 cases of wounds of stomach, six recoveries, mortality 75 per cent.; 36 cases of wounds of colon, 12 recoveries, mortality 66.6 per cent.; 19 cases of wounds of liver, eight recoveries, mortality 58.7 per cent.; 11 cases of wounds of kidney, one recovery, mortality 90.9 per cent.; 50 cases, carefully analyzed, showed a mortality of 66⅔ per cent. for wounds of the small intestine uncomplicated with other visceral injuries, and 70 per cent. when other viscera were wounded.

Wounds of the stomach, liver, and colon all showed the same mortality in *uncomplicated* cases, 66⅔ per cent.

In the 81 cases of wounds of the small intestine there were 439 perforations, or an average of 5.4 for each case.

Laparotomy was performed in nine cases in which no viscera were wounded; of these nine cases, six made prompt recoveries, and in two of the fatal cases

[9] American Journal of the Medical Sciences, vol. ci, No. 3, March, 1891, p. 243.

the operation was delayed until the fourth and sixth days, and then performed with the patient *in extremis* for septic peritonitis.

There were 25 cases in which the alimentary canal was found intact; of these, 12 recovered and 13 died; mortality 52 per cent. (this includes many of the fatal kidney cases); 16 cases of resection, three recovered.

Hydrogen-gas tests were used in 13 cases; of these, 11 died, two recovered; mortality 81 per cent. (The test was used in one other case in which operation was not resorted to, and patient recovered.)

Of the total 165 cases, in only nine instances did the operator fail to find all the perforations. In 48 cases, where the causes of death were given, 25 were assigned to septic peritonitis, 19 to shock, 4 to hæmorrhage. In 16 cases, where drainage was used, six recovered and 10 died; mortality 62.7, slightly below the average.

Dr. Coley draws the following conclusions from the above statistics.

Given a shot-wound of the abdomen, the indications are: (1) *Exploratory incision* in the region of the wound to ascertain whether or not it is penetrating. (2) If penetrating, *median laparotomy* as soon as possible after the injury has been received unless suffering from severe shock. (3) Signs of peritonitis, just beginning or well developed, while diminishing the chances of success, are by no means a contra-indication for operative interference.

PROLAPSE OF THE RECTUM.

Dr. Verneuil proposes to overcome this condition by a new procedure which has for its object the elevation and attachment of the rectum to the region of the coccyx, rather than a narrowing of the lower portion of the bowel.[10] The operation is performed as follows:

After reposition of the prolapsed portion, with the patient in the lithotomy position, two incisions, from four to five centimetres in length, are made, at right angles to the long axis of the anus, from the opening of the latter in an outward direction. From the point where these incisions terminate, two other incisions pass to meet each other at the point of the coccyx, thus including an equilateral triangle with its base placed anteriorly. This triangular flap is loosened from behind forward, and left temporarily attached to the tissues surrounding the anus, comprehending in its thickness the skin, the subcutaneous cellular tissue, together with the fibres of the external sphincter. With this flap strongly retracted by means of blunt retractors, the posterior wall of the rectum is loosened for a breadth of from five to six centimetres, and to a height corresponding to the distance from the anus to the tip of the coccyx. Four threads are now passed transversely through the posterior rectal wall, parallel with each other, and not including the rectal mucous membrane. The upper one of these sutures is placed at a point in close relation to the point of the coccyx, while the lower one is removed about fifteen centimetres from the anus. By means of a needle with an eye at the point, which is passed through the skin from without, the threads are drawn through the points of emergence of their respective ends, being selected at about four centimetres from the median lines at either side. The upper suture should be on a level with the articulation between the first bone of the coccyx and the sacrum, and the lower at about the point of the coccyx; the intervening sutures are placed about equi-distant between. These are now secured upon one side in such a manner that the first and second, and the third and fourth are tied together; rolls of iodoform gauze being placed beneath the loops to prevent the latter from being buried with the skin, strong traction upon these secures the rectum in its new position, and the other ends of the thread are similarly secured. The triangular-shaped flap is now removed, the muco-cutaneous anal margin being preserved, and after inserting a drainage-tube, the wound is closed by sutures.[11]

[10] Bull. et Mém. de la Soc. de Chrg. de Paris, t. xv, p. 754.

THE TREATMENT OF COMPLETE PROLAPSE OF THE RECTUM.

Harrison Cripps[12] believes that while it may be necessary for the cure of complete prolapse of the rectum, occasionally to resort to complete excision, that, as a rule, the use of lineal cautery is founded upon sound physiological principles attended with very slight risks.

"Since prolapse is due to the slipping of one coat of the bowel on the other, together with want of sufficient rigidity in its walls to prevent invagination, the binding the muscular and mucous coats together, and at the same time stiffening the walls by inflammatory deposit, would seem to be plainly indicated. An exudation artificially produced in the submucous tissue meets this indication by cementing the coats firmly together, thus effectually preventing slipping, and at the same time giving the bowel sufficient rigidity. The actual cautery is admirably fitted to produce an abundant inflammatory exudate. Before performing the operation the bowels should be thoroughly emptied. The patient should be anæsthetized and placed in lithotomy position. If possible, the prolapse should be made to protrude; four lines of cautery are then drawn along the bowel in its long axis. These lines should begin well within the canal of the bowel at the apex of the protrusion and terminate at the anal margin; they should be about one-quarter of an inch in width, and deep enough to thoroughly sear but not actually destroy the mucous coat. Where the cautery lines cross large veins these should be tied on each side by passing a threaded needle beneath and knotting. If much time is spent in the operation swelling will take place and the reduction will be difficult.

"In case the prolapse cannot be made to protrude, the bowel may be cauterized *in situ* by using the duck-bill speculum, which may be shifted when necessary. The actual cautery is most satisfactory, since Paquelin's instrument is too hot when first applied and loses heat too readily. After operation a thick india-rubber tube one-third of an inch in calibre and seven inches in length is passed into the bowels for five inches. Strips of oiled lint are then packed around the tube, extending as far as possible into the bowel. Cotton-wool well dusted with iodoform is finally packed into the tube and in and about the anus; thus firm support is given and at the same time the escape of flatus is not prevented.

"Special care must be taken to prevent the descent of the bowel during the early stages of healing. In forty-eight hours the first dressing is removed, the parts are washed, and a clean dressing is applied.

[11] Annals of Surgery, March, 1891, p. 218.

[12] Lancet, Vol. II, No. 15, 1890; American Journal of the Medical Sciences, vol. ci, No. 5, May, 1891, p. 516.

After the first few days the dressing can be dispensed with, but the tube is retained for ten days. During this time the bowels should be kept locked by small doses of opium. Evacuation is finally accomplished by means of castor oil and enemata. The patient must not be allowed to strain, and must empty the bowel while lying on his side with the anus drawn a little from the middle line. This should be enforced for at least six weeks, during which time the consolidation is taking place."

(*To be continued.*)

Reports of Societies.

AMERICAN SURGICAL ASSOCIATION.

TWELFTH ANNUAL MEETING HELD IN WASHINGTON, SEPT. 22-25, 1891.

(Continued from No. 14, page 350.)

WEDNESDAY. — SECOND DAY.

ASEPTIC AND ANTISEPTIC DETAILS IN SURGERY,

by DR. A. G. GERSTER, New York.

Personal cleanliness and cleansing of the field of operation are to be accomplished by mechanical measures rather than by disinfectants. The dirt and oily matter of the skin is removed by emollient potash soap and stiff brush. This is followed by the germicidal lotion. The hands of the surgeon may be sterilized in the following manner: The nails are trimmed short, the hands scrubbed with soap and brush in hot water for one minute. The nails are then cleaned and the hands immersed in strong alcohol and then washed in 1:1000 corrosive sublimate solution. Brushes require careful attention. They may be sterilized by boiling in for five minutes in water containing one per cent. of washing soda. They should be kept in 1:1000 bichloride solution.

Instruments are sterilized by boiling for five minutes in soda solution, in a covered vessel. The addition of the soda prevents formation of rust.

Dressings are rendered absorbent and sterilized by steam. Strong antiseptic agents in dressings are objectional from their action on the skin. Dressings may also be sterilized by boiling in soda or potash lye.

The use of Florida sponges was recommended as owing to their cheapness they can be used once and then thrown away. Boiling of sponges is to be condemned. Sponges are best prepared by heating followed by immersion in dilute muriatic acid, as it is removed by washing; then immersed in water for ten days to permit the spores to germinate. Each sponge is then kneaded in hot water for one minute with potash or soft soap. They are then placed in five per cent carbolic solution for twenty-four hours. As a substitute for the large flat sponges used in laparotomy he recommended the substitution of pads of absorbent gauze.

In operating, few instruments, sponges and assistants should be employed. The dissection should be clean, the tissues being cut rather than torn. Irrigation should not be employed except when special indications are present. In the abdominal cavity irrigation was condemned. When the peritoneal cavity is contaminated by pus, etc., simple wiping away of the matter is sufficient.

In perfectly aseptic operations, no drainage is required. Iodoform gauze can often be substituted for the use of tubes. Drainage by tubes is required where there is progressive suppuration.

In combating septic morbid processes, mechanical measures, such as incision, drainage and irrigation are of more importance than chemical measures.

DR. J. COLLINS WARREN, Boston, described the details of operative surgery as practised in the Boston City Hospital, the Massachusetts General Hospital, and the Children's Hospital.[1]

DR. J. WILLIAM WHITE, Philadelphia, thought the time had not yet arrived when the use of antiseptics could be dispensed with. He preferred an antiseptic dressing in all cases except where the wound is absolutely sterile, and where no discharge is to be expected. While in a general way he agreed as to the value of mechanical measures in cleansing the skin he saw no good reason for throwing aside entirely the use of the weaker chemical solutions. There are so many cases in which we cannot be sure that the wound is aseptic, antiseptic dressings become of importance. He had tried the gauze substitute for sponges in abdominal work, but had found it objectionable from the fact that when the gauze remains long in contact with the intestines, threads of the gauze adhere to the intestines.

DR. JOSEPH RANSOHOFF, Cincinnati, said that in some cases it was absolutely impossible to render the part aseptic, and cited cases illustrating this point. In cases where it became clear that the wound is infected, he removes the dressings and soaks the part in hot water. He had discarded the use of sponges altogether. In the majority of cases he employs the aseptic dressing, but could see no harm in the use of antiseptic dressings. Dressings, etc., in private practice may well be sterilized by heating in the oven. He thought that tight closing of the wound should be practised oftener than it now is. Drainage is rarely used except in wounds already septic. He often uses catgut for drainage. In the septic cases he thought that probably the surgeon was often responsible for the infection of the wound. By clean incisions, cutting far away from the disease, and by not using the sharp spoon too freely, infection of the wound in suppurating cases can often be prevented.

DR. E. M. MOORE, Rochester, asked what objection was there to irrigation? In amputations for instance, irrigation with 1 to 1000 bichloride solution affords a ready means of removing clots, etc. The clots are removed and the wound can be left in a dry state. If this irrigation does no harm, why not use it? Dr. Gerster had condemned it, but he had not given his reasons for such condemnation. In certain cases of abdominal section, where there was oozing of blood, hot irrigations of aseptic water were of great service.

DR. GERSTER, in conclusion, said that he did not condemn antiseptic methods. He employed both methods. In its proper place asepticism is infinitely superior to antisepticism, but the cases must be properly selected. Teachers must be careful not to go too far in advance of the rest of the profession. Those who have not learned the detail should be warned to stick to the older methods and working up the higher methods.

THE SURGERY OF THE SPINE,

by J. WILLIAM WHITE, M.D., Philadelphia.

The conditions discussed were: congenital deformi-

[1] See page 367 of the Journal.

ties, tuberculosis of the spine, neoplasms and traumatisms. Under this first head, spina bifida is the only condition requiring consideration. In this, injection by an iodo-glycerine solution offers the greater prospect of ultimate recovery with the least immediate danger.

In tuberculosis of the spine the indications for interference are the evacuation of pus, removal of a sequestrum or of a focus of carious bone, and relief of the cord from pressure. There are records of 14 operations upon the bodies of vertebræ for abscess, with eight cures, five cases improved and one death, which had no relation to the operation. There have been 40 cases of operation on the spine for the relief of pressure. In 22 there was either improvement or cure. The effect of suspension in the treatment of Pott's paralysis has been so favorable that it should occupy a prominent position.

Conclusions in regard to operative treatment of spinal tuberculosis with symptoms of pressure on the cord, were:

(1) The paralysis in Pott's disease is not, as a rule, due to a transverse myelitis or hopeless degeneration, and is not usually due to the pressure of the carious or displaced vertebræ; but is in the majority of cases the result of an external pachymeningitis, which results in the formation of an extra-dural connective tissue tumor.

(2) Speaking generally, a favorable prognosis is to be given, especially in children, in cases of Pott's paralysis, in which the abscess, if any exists, can be evacuated; the treatment by extension and with plaster jacket can be employed, and the patient can be put under the most favorable hygienic conditions.

(3) In cases in which all this has been tried unsuccessfully, or in those in which disease is slowly but steadily progressing to an unfavorable termination; where with more or less complete loss of motion and sensation below the level of the lesion, there are incontinence of urine and fæces and the development of bed-sores, and especially where acute symptoms threaten life, re-section becomes justifiable.

(4) Operation having been decided upon for any or all of the above reasons, the prognosis will be favorable in direct proportion to the youth and strength of the patient, the absence of generalized tuberculosis and the nearness of the lesion to the base of the sign.

(5) When the tuberculous process affects the arches and there is paraplegia, we may sometimes operate, hoping not only to free the cord but at the same time remove the focus of disease. This double indication may also be fulfilled in those cases where without bony disease there is posterior pachymeningitis or a tuberculoma occupying the canal.

(6) If the lesion of the bodies of the vertebræ is in the lumbar region at a point where these bodies are accessible, it might be possible in certain cases to expose the cord from the back, by removal of the laminæ, with the object not only of removing pressure but of reaching and taking away the diseased bone and tubercular granulation.

(7) In tuberculosis of the body of a vertebra and compression of the cord by anterior pachymeningitis we can fulfil only one indication — liberate the cord from pressure. We should operate only in grave cases where acute compression, the appearance of respiratory complications, the rapid development of degenerative processes force us to interfere, or where the course of a chronic case is steadily toward a fatal termination although no advanced visceral tuberculous lesions are present.

In regard to neoplasms, it was said that every case of focal spinal lesion, thought to depend on a tumor and not distinctly a malignant and generalized disease, should be regarded as amenable to operative interference, no matter how marked the symptoms of pressure may be, nor how long continued.

Traumatism. — The indications and contra-indications for trephining in spinal fractures are based on the following points: (1) the nature of the vertebral lesion and the nature and extent of the medullary lesion; (2) the time which has elapsed since the traumation; (3) the regional level of the medullary lesion.

The following conclusions were presented:

(1) Some objections urged against operative interference in spinal traumatisms, that is, hæmorrhage, frequency of absolute destruction of the cord, pressure from inaccessible fragments of bone, etc., have been shown to be unsupported by clinical facts; others were largely due to a well-founded dread of (*a*) the shock, in those cases operated on in pre-anæsthetic times, and (*b*) consecutive inflammation, suppuration and pyæmia in pre-antiseptic periods.

(2) Some results of recent operative interference in properly selected cases of fracture of the spine are encouraging, and should lead to the more frequent employment of resection of the posterior arches and laminæ: (*a*) in all cases in which depression of those portions either from fracture or dislocation is obvious; (*b*) in some cases in which, after fracture, rapidly progressive degenerative changes manifest themselves; (*c*) in all cases in which there is compression of the cauda equina from any cause, whether from anterior or posterior fracture or from cicatricial tissue; (*d*) in the presence of characteristic symptoms of spinal hæmorrhage, intra or extra medullary.

(3) Operation is contra-indicated by a history of such severe crushing force as would be likely to cause disorganization of the cord. The question which will remain in doubt previous to operation will usually be that of the extent of damage done to the cord and the possibility of its taking on a reparative action. As to this, the safest rule is that which has been formulated by Lauenstein, namely, that if after the lapse of six or ten weeks there is incontinence of urine or incontinence of fæces, and especially if there is also the development and spreading of bed-sores, but little is to be hoped for from the unaided efforts of nature. If, however, these symptoms are absent, and if there be the least improvement it will be proper for the surgeon to delay operative interference still longer.

DR. H. H. MUDD, of St. Louis, dwelt upon the importance of remembering the liability of severe shock in these spinal operations. He reported three cases of bullet wounds of the spinal column, one of which ended fatally.

DR. JOHN B. ROBERTS, Philadelphia, insisted that injuries and diseases of the spine of a surgical kind, should be treated as we treat injuries of the cranial cavity. Cases of Pott's disease with angular curvature have been referred to, but sufficient stress has not been laid upon the fact that many of these cases with motor paralysis improve under ordinary remedies, the inflammatory exudation being absorbed. In traumatism of the spine, we should explore the spine as we should the brain. In severe injuries with fracture spicules of bone are often driven down on the cord.

Dr. J. J. Putnam, of Boston, thought that the dangers of inflammation had not been sufficiently dwelt upon. Some cases of spinal injury, after one to four years, show some improvement. In such cases an operation may add to the improvement.

Dr. James M'Cann reported two cases of spinal injury in which operation had been performed. In one, death followed. In the other, there was great improvement.

THE TREATMENT OF TUBERCULOSIS OF BONES AND JOINTS BY PARENCHYMATOUS AND INTRA-ARTICULAR INJECTIONS,

by Dr. N. Senn, Chicago.

The following conclusions were presented:

(1) Parenchymatous and intra-articular injections of safe antibacillary substances are indicated in all subcutaneous tubercular lesions of bones and joints accessible to this treatment.

(2) Of all substances, so far employed in this method of treatment, iodoform has yielded the best results.

(3) The curative effect of iodoform in the treatment of local tuberculosis, is due to its antibacillary effect, and its stimulating action on the healthy tissue adjacent to the tubercular product.

(4) A ten per cent. emulsion in glycerine or pure olive oil is the best form in which this remedy should be administered subcutaneously.

(5) The ethereal solution should never be employed as it is liable to cause necrosis of the tissues overlying the abscess or iodoform intoxication.

(6) Tubercular abscesses and joints containing synovial fluid or tubercular pus should always be washed out thoroughly with a three to five per cent. solution of boracic acid before the injection is made.

(7) Injections should be made at intervals of one or two weeks, and their use persisted in until the indications point to the cessation of tubercular inflammation and the substitution for it of a satisfactory process of repair, or until the result of this treatment has shown its inefficacy and indications present themselves of the necessity of resorting to operative interference.

(8) If the treatment promises to be successful, symptoms pointing to improvement manifest themselves not later than after the second or third injection.

(9) In tubercular empyema of joints and tubercular abscess, gradual diminution of the contents of the joint or abscess at each successive tapping, and lessening of the solid contents of the fluid and increase of its viscidity, are the conditions which indicate unerringly that the injections are proving useful, and that in all probability a cure will result from their further use.

(10) Moderate use of the limb is compatible with this method of treatment, provided the disease has not resulted in deformities, which would be aggravated by further use of the limb. In such cases correction of the deformity should be postponed until the primary joint affection has been cured by the injections.

(11) Parachymatous and intra-articular medication with antibacillary material, has yielded the best results in tubercular spondylitis attended by abscess formation and tuberculous of the knee and wrist joints.

(12) This treatment may prove successful in primary osseous tuberculosis followed by involvement of the joint, provided the osseous foci are small.

(13) Extensive sequestrums of articular ends with secondary tubercular synovitis, always necessitates resection, but preliminary treatment by iodoform injection into the affected joints constitutes a valuable preparatory treatment to the operation, and adds to the certainty of a favorable result.

(14) In open tubercular affections of joints, incision, scraping, disinfection, iodoformization, iodoform gauze tampon, suturing, and subsequent injections of iodoform emulsion is advised, and yields excellent results, and should be employed in all cases in which a more formidable operation can be avoided.

(15) Balsam of Peru ranks next to iodoform in the treatment of tubercular affection of bones and joints; and if the latter remedy for any reason cannot be employed, or has failed in effecting the desired result, it should be given a fair trial, if operative treatment is not urgently indicated.

THURSDAY. — THIRD DAY. — EXECUTIVE SESSION.

The officers for the ensuing year are as follows: President, Dr. Phineas S. Conner, Cincinnati; First Vice-President, Dr. L. McLane Tiffany, Baltimore; Second Vice-President, Dr. Levi C. Lane, San Francisco; Secretary, Dr. J. R. Weist, Richmond, Ind., Recorder, Dr. J. Ewing Mears, Philadelphia; Treasurer, Dr. John B. Roberts, Philadelphia; Member of Council, Dr. Claudius H. Martin, Mobile.

The committee recommended the following resolution, which was adopted: "*Resolved*, that the Association hereafter hold each triennial meeting at Washington, and that other annual meetings be held at such time and place as the Association may name."

Next meeting will be held in Boston, in June, 1892.

The following were elected to membership: Drs. J. S. Wight, Brooklyn, George R. Fowler, Brooklyn, N. Y.; Dr. E. W. Walker, Cincinnati, O.

The following honorary members were elected: Mr. John Chiene, Edinburgh; Mr. Reginald Harrison, London; Mr. Thomas Bryant, London; Mr. Arthur Eduard Durham, London.

REGULAR SESSION.

RECURRENCE OF CANCER OF THE BREAST,

by Frederic S. Dennis, M.D., New York.

Only those cases were included in which a microscopical examination of the tumor had been made. The necessity of an investigation of carcinoma of the breast is shown by the fact, that, in England alone, 7,000 deaths occur annually from carcinoma and a large proportion of these are cancer of the breast. It has been demonstrated that cancer is a disease which is slowly increasing in civilized nations. A study of the subject shows that there are seventy-five per cent. of recurrences. These include cases of incomplete operation, that is, where the axilla has not been opened. In the primary growth at the beginning, the neoplasm is of local origin. Early and complete removal of the growth relieves the local disease, but the operation does not relieve the predisposition or susceptibility or the capability for the recurrence of the disease. It is possible that the capability is limited to a certain extent.

The recurrence of carcinoma of the breast is influenced, first, by the period of time from the appearance of the growth to the date of the operation. In the cases of the author in which the cure had continued for three years or more, the tumors were removed on an average six months from the date of their first recognition in the breast. In all the cases of permanent cure, the axillary glands were not invaded.

Recurrence is influenced, second, by the extent to which infiltration has taken place by any one or all of the three well-recognized ways of dissemination. When the tumor has existed long enough to show extension in these directions, the growth has been of long duration.

Third, recurrence is influenced by the radical character of the operation itself. Complete removal of the breast is essential. The method of Mr. Stiles, of Edinburgh, by which the tumor after removal is treated with dilute nitric acid, in order to show whether or not the incision has been made in healthy structures and all the diseased structure has been removed, was described. The reported mortality of the operation is high, but, in the author's seventy-one cases, there had been but one death and that was from continued bleeding in hæmophilia. In operation, not only the breast, but the axillary glands were removed in most cases.

Fourth, recurrence is influenced by the histological character of the carcinoma itself. Where the structure differs slightly from the normal the clinical history is favorable. In none of these cases was there recurrence. Where there is great departure from the normal type, the clinical history is unfavorable. The more embryonic the structure the greater the chance of recurrence.

Fifth, the recurrence is influenced by the simultaneous occurrence in both breasts. This occurs in five per cent. of the cases. These patients are very liable to recurrence.

Sixth, recurrence is influenced by the personal factor of the individual, such as age, sex, marriage, fecundity, sterility, pregnancy, traumatism, heredity, menstruation, metastasis, mental condition, locality, etc.

Seventy-one cases of carcinoma of the breast which had been operated on, were referred to. In one there had been death from hæmophilia. In nearly all the axilla was opened. The operation consisted of excision of the entire breast, with all contiguous skin, the para and peri mammary, fatty areolar tissue, the pectoral glands, the pectoral fascia and also removal of the axillary glands and fatty axillary tissue. In some cases the supra-clavicular glands were removed, and in one case excision of the ribs was done. The percentage of permanent cures amounted to thirty per cent. The author held that with early and radical operation, recurrence of carcinoma of the breast will be comparatively rare.

MR. THOMAS BRYANT, London, believed firmly in the local origin of carcinoma, although we must admit that there may be a predisposition on the part of the patient to the development of the disease. The disease should be treated at an early period and this brings us to the question of diagnosis. Many cases do not come under observation until the disease is well advanced, because the patient imagines that a disease unassociated with pain cannot be cancer. Where induration appears in a breast during the period of functional activity, there may be some hesitation in the diagnosis, but, in some thirty cases of this kind, he had recommended immediate operation and in all the cases the disease was shown to be malignant. In none has recurrence taken place. When the disease has advanced somewhat further with dimpling and puckering of the skin and some immobility, we may get a good result by making a thorough operation. He had had some cases without recurrence for from five to twenty years. In the more advanced cases the surgeon should limit his operations to those in which there was a reasonable prospect of removing all the diseased structure. He does not remove the axillary glands in every case. If the glands be enlarged or the disease extend upward in that direction, he removes the glands thoroughly. Where the disease is quite local and there is no evidence of axillary involvement, the axilla is not opened. In the atrophic form of cancer he thought it better not to interfere unless the tumor was giving rise to great inconvenience. Operation in these cases is often followed by a more rapid form of growth. Again, in this form of cancer where the lymphatics can be traced distinctly and the breast has a brawny feel — the lymphatic form of cancer — the surgeon does no good by interference.

SIR WILLIAM MACCORMAC, London, thought that the axilla should be opened in operations for carcinoma of the breast for two reasons, namely, an examination of 117 cases of cancer of the breast showed that in all but two there was axillary involvement, and second, in ninety per cent. of the recurrence, the disease appears in the axilla.

DR. LEWIS S. PILCHER, Brooklyn, thought that the term "recurrence" was not applicable to many of these cases, and that in many the disease was simply a continuance of the former growth. If the case goes one year without the appearance of a return of the disease, it may be considered that the disease has been removed, and if it appears later it can be regarded as a recurrent, a renewed or a new attack of cancer. In every case of cancer there is a predisposition to the disease and we should search for some agent to counteract this constitutional predisposition, which we can use in addition to operative measures. Arsenic has for many years been used for this purpose. Dr. Wight, of Brooklyn, has suggested the use of carbonate of lime for the same purpose.

DR. L. MCLANE TIFFANY, Baltimore, did not think that we could set any limit to the time at which recurrence might take place. He had had the disease return eight years after operation. He was a firm believer in the local origin of cancer. The date at which the disease is recognized varies much. In some the disease came before the surgeon shortly after its commencement, while in others the tumor had reached considerable size. The time at which the disease is discovered by the patient bears no relation to the time of its commencement. Too much stress had not been laid in the necessity of thorough operation. In only two cases out of eighty operations for cancer of the breast had he found the axillary glands not enlarged. The pectoral fascia should be removed, and at times a portion of the muscle should be cut away.

DR. KINGSTON, Montreal, believed that cancer was essentially a local disease. If we believe this, operation should be done at as early a date as possible. The glands should be removed not only from the axilla, but from its neighborhood if they are enlarged; but this should not form a necessary part of the first operation. Such a procedure adds greatly to the discomfort and to the danger. Where there is the slightest suspicion of involvement of the glands, they should be removed. If there should be recurrence, the operation should be repeated as often as circumstances seem to warrant.

DR. JOSEPH RANSOHOFF, Cincinnati, reported thirty cases of removal of the breast for cancer, without a death. He thought that the danger of the operation was not materially increased by opening the axilla.

Dr. C. B. Nancrede, Ann Arbor, said with reference to the three-year limit, that this had been proven to exclude 98 per cent of the recurrences. It is impossible to tell whether or not the axillary glands are involved without opening the axilla. Unless this is done the majority of the cases will be left unbenefited. He advised that the axilla be opened first, and if the glands could not be removed to close the wound and not remove the breast.

Dr. J. R. Weist, Richmond, Indiana, had operated fifty-five times for cancer of the breast, and makes it a rule to open the axilla in every case.

Dr. George W. Gay, Boston, felt that there was no such thing as a local origin of cancer as we have the local origin of a fatty tumor. When it can be shown that a cancer taken out will not return, just as a fatty tumor when removed does not return, then we can prove the local origin of carcinoma.

Dr. Edward M. Moore, Rochester, always operates in as thorough a manner as possible. He always opened the axilla, and did not think that it added to the risks of the operation. He did not agree with Mr. Bryant in regard to the atrophic cases in old individuals. In these, he recommended operations, considering recurrence very improbable. He reported one case living seventeen years after operation, and now seventy-nine years of age.

A CASE OF DIFFUSE FIBROMA WITH A TENDENCY TO INTRA-CANALICULAR GROWTH OF BOTH BREASTS,[1]

by Dr. C. B. Porter, of Boston.

Mrs. M., thirty-seven years of age, resident of Nova Scotia, was admitted to the Massachusetts General Hospital. Has had two children, the youngest ten years old. Three years ago she discovered a hard lump in the right breast, which gradually increased in size. Three months later the right breast commenced to enlarge. The breasts continued to slowly enlarge until three months ago when a rapid increase took place, and the breasts soon became burdensome by their size and weight. On examination, she was found to be pale, emaciated and with ovarian facies. Right breast: largest circumference 38 inches, length from chest wall to nipple 17 inches, circumference of base 23 inches. Left breast: largest circumference 28 inches, length from chest wall to nipple 14 inches, circumference at base 23 inches. Throughout both breasts were felt movable hardened masses of irregular outline, varying in size from an orange to a closed fist.

It was decided to remove the left breast first. The breast was transfixed at the base with two skewers, and constricted below this with a tightly drawn rubber tourniquet. The breast was then removed, and but little blood lost. Three weeks later the right breast was removed. Twenty days after the second operation the patient was permitted to leave the hospital to visit friends, but instead she went home, requiring a long sea journey. A week later she developed erysipelas. This had much improved in four days when she suddenly aborted a five months' fœtus.

The weight of the right breast after removal was 43 pounds, and that of the left 17 pounds, a total of 60 pounds. A *résumé* of the reported cases was added.

Dr. J. M. Barton, of Philadelphia, reported a similar case, on which he had operated, and in which one breast was involved.

(To be continued.)

[1] To be published in an early issue of the Journal.

ASSOCIATION OF AMERICAN PHYSICIANS.

The Sixth Annual Meeting, held in Washington, Sept. 22-25, 1891.

TUESDAY. — FIRST DAY.

At the opening of the session, the President, Dr. William Pepper, of Philadelphia, delivered an

ADDRESS.[1]

Dr. Pepper spoke first of the members who had died during the past year. Hosmer Allen Johnson, a founder, trustee and professor of the Chicago Medical College, and one of the original members, died February 26, 1891, at the age of sixty-eight years. In the truest sense of the word, he was an ornament to our profession. Dignity and elevation of character, blended with rare charm of presence, conferred additional distinction upon his high scientific and literary attainments.

James Kingsley Thacher, professor of physiology in the Medical Department of Yale University, and an original member of the Association, died on April 20, 1891, at the age of forty-four years. Dr. Thacher early displayed rare powers as an investigator and thinker. It was not until the age of thirty-three and after he had won international distinction by his researches in comparative anatomy and physiology, that he began the practice of medicine. He rapidly attained the front rank of the profession. He well illustrated the highest type of the physician — the student of Nature as revealed in the functions and disorders of the human body.

Richard Lee MacDonnell, professor of clinical medicine in McGill University, had been a member of the Association but a short time when his death occurred on July 31, 1891, at the sadly early age of thirty-five years. He possessed gifts and ability of high order as a clinician, as a writer, and as a teacher.

Dr. Fordyce Barker, one of the Honorary Members, died May 30, 1891, at the age of seventy-three. His long life seemed all too short for the countless acts of courtesy and charity which he found place for in a career rich in professional and social success. The affectionate solicitude with which he lavished on his patients, rich and poor alike, the resources of his skill, made him one of the most successful and beloved of physicians.

In the death of Joseph Leidy, which occurred on April 30, 1891, at the age of sixty-eight years, the medical profession in America lost its most loved and honored member, and American science its most illustrious representative. Leidy never had a theory to support or a purpose to serve. The all-sufficing motive of his life was to learn the truth of Nature, and to help others to learn it also. He made great discoveries in various fields of scientific research; but he never seemed to feel any credit was due to him. If only the facts were discovered, it mattered not to him by whom the discovery was made; and windy battles over claims of priority or selfish struggles to pre-empt fields of investigation were alike impossible to him. The mere fact that his scientific contributions numbered fully eight hundred, conveys little idea of the range of subjects they covered; the epoch-making character many of them possessed; or the enormous amount of patient labor bestowed on the thousands of exquisite illustrations they contained.

[1] Printed in full on page 316 of the Journal.

Dr. Pepper congratulated the Association upon the interest taken in its meetings, and expressed great pleasure in the presence of the foreign guests.

Reports on the Treatment of Visceral Tuberculosis by Koch's Method.

Report by Dr. F. P. Kinnicutt, of New York. During the interval between December 10th and June 1st, forty-two patients suffering from various forms of tuberculous disease were inoculated with Koch's fluid, under Dr. Kinnicutt's personal supervision, in the wards of St. Luke's Hospital. Of these forty-two cases, but thirteen were of pulmonary tuberculosis. The results in these pulmonary cases were, that five were notably improved in both pulmonary and general condition, four showed no improvement or showed improvement in some respects but not in others, four showed distinct deterioration.

The impression which Dr. Kinnicutt received from an experience of nearly nine months in the treatment of various forms of tuberculosis with tuberculin, may be summarized as follows: Tuberculin possesses marked elective affinities for tuberculous tissues. Its value in deferential diagnosis is relative, rather than positive. Tuberculin not only does not produce immunity, but in certain cases apparently predisposes tissues contiguous to the seat of the original disease, as well as more distant structures, to infection. The fever and general constitutional disturbance produced by tuberculin are not only harmful, but are probably unessential to its remedial action. This clinical impression is strengthened by very recent chemical investigations, which indicate that tuberculin contains not one, but several, active principles, and that its activity in producing fever and constitutional disturbance is apparently dependent upon contained substances quite distinct from its remedial principles. Inoculations of minimum strength, gradually increased and given at longer intervals than was originally advised, constitute the safest and probably the most efficient method of its use.

As to the effects of tuberculin in the treatment of pulmonary tuberculosis; its remedial action is apparently restricted to pulmonary disease in its early stage. In such forms of tuberculosis, the most careful study of the individual, of the history and physical signs of the disease previous to inoculation, does not permit an opinion of the probable nature or degree of reactions or of the ultimate effect of treatment in any given case. The establishment of constitutional tolerance varies greatly in time in different individuals suffering from apparently similar lesions, and cannot be accepted as a basis for prognosis. Local reactions may continue to be developed under treatment, in the entire absence of constitutional effects, as indicated by the temperature curve. Tuberculin is apparently capable in exceptional cases, even of incipient disease, of exciting pneumonic processes (catarrhal and caseous hepatization) of varying degrees of intensity. Such processes are probably due to the conveyance into other parts of the lung of cheesy material and liberated bacilli. In cases of localized tuberculous pleurisy, the inflammatory action excited by tuberculin may lead to a general infection of the pleura. The production of hæmoptysis is comparatively rare. Its use necessitates the greatest watchfulness, and entails much anxiety on the part of the physician. The exceptional dangers and harmful action of tuberculin do not preclude its employment, for it exercises a remedial action in a yet undetermined percentage of cases of pulmonary tuberculosis in its early stage, and an ameliorating effect upon many of the symptoms of more advanced disease. The complexity of the conditions often present, even in the early stage of the disease, and the idiosyncrasies of tissue reaction in different individuals, are suggested in explanation of the failure of a remedial action in cases apparently similar. The most recent observations give promise of an enlarged sphere of usefulness in modifications of the original preparation.

Report by Dr. Wm. Osler, of Baltimore. In the medical wards of the Johns Hopkins Hospital inoculations were practised on twenty-eight patients. Twenty-two of these were cases of pulmonary tuberculosis, three were cases of pleurisy suspected to be tuberculous, two were for diagnostic purposes with negative results, and one case which was thought to be tuberculous adenitis proved to be cancerous. In giving the injections we began with small doses, and, as a rule, gradually increased if the patient had no reactions, in some instances going as high as thirty-five or forty milligrammes. Cases were selected which were, so far as physical examination could guide us, either in the early stage, or instances in which the disease was quiescent. The injections were not practised on any advanced case.

No case was cured. Five cases were decidedly benefited; the results being evident not so much in change in the physical signs as an improvement in the general condition and in weight: thus the cases which improved gained from nine to fourteen pounds. In not one did the bacilli entirely disappear from the expectoration. In all, the cough was reduced in frequency. Details of three of these patients could not be obtained; two of them were seen within a week. In one the improvement continues. Thus the second case on which it was used weighed on admission 114 pounds, and weighed on discharge 117½ pounds, and on the 13th of September weighed 126 pounds. In this case, too, there is an improvement in the physical signs, the râles having diminished in a marked manner. Another of the cases which had improved very much has lost ground through the summer, and on examination a few days ago the disease had evidently made progress. The five cases in which improvement was most marked were cases in which the disease was not very recent, having lasted from seven months to more than two years; but in all of them the trouble was more or less localized. Of the remaining seventeen cases, nine left the hospital distinctly rendered worse by the treatment. Of these, one died shortly after, and another a few weeks ago. Of the other seven nothing has been heard. In four the condition was not materially changed, and in four there was slight improvement, noted particularly, in the gain in weight.

No deaths occurred while the patients were directly under treatment. In one case not counted in this list, a patient had a single injection and in two days he developed signs of extensive pneumonia of the right base, which we were at first inclined to think might be a tuberculin pneumonia, but the persistent high fever and the progressive and rapid development of the consolidation, rather favored the view that it was an acute pneumonia. The autopsy made by Dr. Welch fully confirmed this. The bad results of the

treatment were evident in the increase in the consolidation, breaking down of the lung tissue, great increase in the fever, progressive weakness, and loss of weight. This was specially marked in several of the cases in which the disease was in an early stage. Of the three pleurisy cases, one gained 13¼ pounds, a second 5½, and a third 10 pounds. These were instances of suspected tuberculous pleurisy, and there were reactions after the injections, but tubercle bacilli were not found in the expectoration.

On the whole we were, of course, disappointed with the results. We cannot reproach ourselves with a lack of care in the selection of the cases, as we exercised reasonable caution in choosing patients in a tolerably favorable condition, and in as early a stage as possible. The increase of dose which was carried out in many, but not in all, of the cases, may have been a mistake, but in this matter we followed, we believed, the best directions.

Report by Dr. Harold C. Ernst, of Boston. My experience with tuberculin has apparently corresponded with that of most others. There is a marked and rapid improvement in certain cases, more especially those of external tuberculosis (including lupus), which goes on for a certain time and then stops, and the effect of the material is lost. The lesions even begin to retrograde. Seen at a certain time after the treatment has been going on, the results for the future are very apt to be gauged by what has been accomplished in the first of the treatment; and this is precisely what happened in my observations in Berlin. I saw there the same — only more marked — improvement in cases of lupus, pulmonary tuberculosis and surgical disease that has occasionally occurred here; but neither there nor here has the early promise been kept up.

My experience with tuberculin would lead me to take the following positions in regard to it:

(1) It has no diagnostic value that is at all applicable at present to clinical use.

(2) I have been entirely unable to demonstrate anything more than a possible temporary beneficial result (and this only in certain cases) in human beings, in any form of tuberculous disease.

(3) I have had no personal experience with its ill effects, but there can be no doubt that these occur.

(4) Its advantages, so far as I have seen them, would not induce me to use it again in practice.

There are, however, certain other points that should be well understood, before this material, or rather its source, should be given up for investigation. Some of these seem to me to be indicated as follows:

(1) Tuberculin itself is a very complex material, and its constituents must be separated and well-understood, before it can be definitely asserted that it does not contain something of value in compelling the healing process in tuberculous lesions; this is well shown by the results obtained by Hunter and Cheyne.

(2) The same thing is indicated even more strongly by the effects that seem to have shown themselves in the clinical experiments conducted with it; for while there has not been much actual healing to report, nevertheless, such effects have been demonstrated, that it is within the bounds of possibility to believe that by different methods of preparation a material may be obtained from pure cultures of the bacilli that may give more satisfactory results.

A preliminary paper on

THE CLIMATE OF SOUTHERN CALIFORNIA FOR RESPIRATORY DISEASES,

by Dr. Norman Bridge, of Los Angeles, was read by title.

J. West Roosevelt, of New York, read a paper on

THE FREQUENCY OF THE LOCALIZATION OF PHTHISIS PULMONALIS IN THE UPPER LOBES.

It is well known that in a great majority of cases the earliest lesion of pulmonary phthisis is found in the apices of the lungs, and the writer reports certain work which he has done bearing upon the reasons for this localization.

The bacilli might be lodged by the air currents during inspiration in the places in which the tubercles are formed; or they might be first inhaled in the larger bronchi and there deposited during inspiration, and subsequently be forced into the upper lobes together with mucus, etc., during forced expiration, as in coughing, or during the normal quiet expiratory movement.

These explanations assume the existence of some mechanical disadvantages affecting the apical parts of the lungs, which cause either excessive inspiration power with relatively insufficient expiratory power, or possibly the later alone. It is often stated that the upper parts of the chest move less freely than the lower. This statement is, it seems to the writer, doubtful. Certainly in women the normal type of respiration is thoracic and the upper parts of the chest move freely, while in men the lower thorax and abdomen move most. If relative chest expansion determines the seat of the lesion, the marked difference between thoracic and abdominal breathing ought to affect its localization. It does not, however, for phthisis in the female has its earliest seat in the upper lobes, just as it does in the male.

It must be remembered that if the tubercle bacillus is actually lodged in the apices by respiratory movements, the same movements ought to produce the same result with the pneumonococcus and with dust. Yet the pneumonococcus in a large majority of cases is lodged in the lower lobes, and dust does not primarily and in any very marked degree affect the upper. Moreover, if, as has been suggested, during coughing the lower lobes pump their secretions into the upper, we should find the upper usually over-filled with such secretions at autopsies in cases of chronic or acute bronchitis, which is not the case.

The anatomical peculiarities of the pulmonary artery are such that it seems very probable that it is through this vessel that the bacilli pass and are thrown into the upper lobes, in the form of minute emboli, and that these are arrested at the places where the relatively large arteriole suddenly breaks up into capillaries in the lobules. The bacilli may enter the system through the systemic veins or the lymphatics. In the latter case they might be absorbed by any part of the lymphatic system, including the lymph vessels of the naso-pharynx, mouth, large bronchi and digestive tract, and enter the vena cava through the thoracic ducts. Having entered the right ventricle, they would be propelled with the blood through the pulmonary artery. In this vessel the momentum acquired by them would cause them to run along the upper walls of the main branches and to enter the branches which supply the apices.

In connection with the paper were presented illustrations of the anatomy of the pulmonary blood-vessels and of the bronchi, and also specimens showing the behavior of inhaled dust. There were also shown specimens of lungs which were so prepared as to maintain their normal elasticity. Demonstrations of the distribution of pigment in lungs, as shown in large, thick, transparent sections, were exhibited.

Dr. W. H. Welch, of Baltimore, expressed his appreciation of the experimental and anatomical work relating to the lungs which has been performed by Dr. Roosevelt. The most important part of the paper, he thought, was that which gave the experimental proof that small particles, when inhaled, go only a comparatively short distance into the bronchi, and that the mechanical and other conditions usually assigned for the assumed frequency of penetration of tubercle bacilli along the air-passages into the apices of the lung are either not operative or do not exist at all. He not only criticised acutely the current theories on this subject, but has brought direct experimental evidence against them; and this is to be welcomed as a genuine and important contribution to our knowledge. Dr. Roosevelt's suggestion that we may perhaps better explain the common localization of tuberculosis at the apex, by assuming that the bacilli are conveyed there by the blood-current rather than by the air-passages, is open to serious objections. He has himself pointed out the manifest difficulties which this hypothesis meets in the known behavior of emboli carried to the lungs by the blood circulation. It matters not whether these emboli be large or small, heavy or light, portions of thrombi or tubercle bacilli detached from a tuberculous thrombus in the thoracic duct, there is evidence from post-mortem observations on human beings that they have no preference for lodgement in the apices of the lungs. Again, in order to explain the more frequent occurrence of pulmonary tuberculosis at the apex, is it necessary to demonstrate that tubercle bacilli are more frequently carried there than to any other part of the lung? May we not equally well assume that even if the bacilli are conveyed no more frequently, or possibly less frequently, to the apex, that they find there specially favorable conditions for their invasion and growth; whereas, under ordinary circumstances, they do not find similar conditions when they enter other parts of the lungs?

Dr. William M. Ord, of London, endorsed Dr. Welch's criticisms. He has long thought that the localization of tuberculosis at the apex of the lung is chiefly determined by a selective power existing in that part of the lung which offers increased facility for the deposit or further development of the bacillus. The apices of the lung are much more prone to smaller localized inflammations, to that kind of process in which we know that the tubercular bacilli readily find a nidus for their development. Studies in comparative anatomy seem to show that the apical portions of the lung are not as highly organized as the basical.

Dr. Jacobi, of New York, expressed the opinion that in all probability those cases of tuberculosis which are the result of embolism (unless they are miliary) are rare compared with those that are the direct result of the location of the bacillus on and in the mucous membrane. That, just as in diphtheria, in order to have an invasion you must have a diseased mucous membrane, you must have an abnormal condition of the epithelium. In most cases of extensive tuberculosis in the young, cavities are found at least just as many times, and probably in the great majority of cases, in the lower lobes. The reason for this is probably because the epithelium in these portions of the lungs was broken down in consequence of the lobular pneumonias and catarrhs, which take place more frequently in the lower lobes. Is it not true or probable that there is an abnormal condition of the epithelium in the apices of the lungs of the adult similar to what is so frequently found in the lower lobes in the very young?

Dr. V. C. Vaughn, of Ann Arbor, agreed with Dr. Roosevelt's criticisms of other theories, but could not accept Dr. Roosevelt's own theory. It is exactly those cases which result from inoculation through the blood and lymph which are not localized in the apices. Experimentally introducing tuberculosis by way of the intestinal canal, the tuberculosis develops in the mesentery and in the intestines, or, if in the lungs, not specially localized in the apices. Clinically, tubercular disease of children is mostly of the intestines and mesentery, and when in the lungs, is not especially localized in the apices. When we inject cultures of the bacillus tuberculosis into the blood, we do not get special localization in the apices.

Dr. Roosevelt: The work of destruction is, of course, easier than that of construction, yet it is worth while to attack all theories, for if they are demolished they must be false and misleading. This theory was not advanced as proven, but it seems plausible in spite of the perfectly just objections advanced by Dr. Welch. The conditions referred to in the paper do not resemble those which obtain when an enormous number of bacilli are continually being poured into the blood from a tuberculous thoracic duct, or when a blood-clot large enough to occlude a large branch of the pulmonary artery is concerned.

The question of local vulnerability as determining a soil suitable for bacillary growth was not considered, because it is something so vague and intangible that I desired, if possible, to ascertain whether some physical explanation could not be discovered which would be more comprehensible.

The most important point in the paper is to establish the fact that inhalation does not account for the phenomenon. This is a matter of practical value, for it makes it the more important to appreciate the risk of tubercular infection in other ways than through the air.

(To be continued.)

Recent Literature.

On Painful Menstruation, the Harveian Lectures, 1890. By Francis Henry Champneys, M.A., M.D. Oxon., F.R.C.P. London: H. K. Lewis. 1891.

The main interest in these lectures lies in the pathological interpretation which the author gives to the question of dysmenorrhœa. Briefly stated, his views are these: He narrows the variety of dysmenorrhœa to two, inflammatory and spasmodic, and the first he does not consider, strictly speaking, dysmenorrhœa, "for the pain in the majority of cases principally occupies the inter-menstrual period, and is relieved by the flow." That leaves only the spasmodic, to the most remarkable subdivision of which, membraneous

dysmenorrhœa, he devotes the whole of the second lecture. He very thoroughly reviews the literature of the subject, and in discussing the cause of the pain, concludes that it is due to colic excited by the passage of a foreign body over a specially sensitive part.

In the third lecture he discusses spasmodic dysmenorrhœa. The mechanical obstructive theory is very sharply criticised, and in our opinion effectually controverted. His views are that spasmodic dysmenorrhœa is pre-eminently an affection of the immature uterus, that the pain is certainly colic, and that it is essentially a neurosis.

His views as to treatment we agree with, and we consider the book as on the whole a very thorough and important contribution to our knowledge of this subject. This short *résumé* has not done justice to the amount of work which is represented. There is incidently a very interesting discussion of the phenomena of menstruation, especially of the changes which occur in the mucous membrane. It is a book which will well repay reading.

Manual of the Domestic Hygiene of the Child; for the use of Students, Physicians, Sanitary Officials, Teachers and Mothers. By JULIUS UFFELMANN, M.D., Professor of Internal Medicine at the University of Rostock. Translated, with the author's kind permission, by HARRIOT RANSOM MILINOWSKI, edited by MARY PUTNAM JACOBI, M.D. New York and London: G. P. Putnam's Sons. The Knickerbocker Press. 1891.

This treatise of some two hundred and twenty-five pages contains much valuable information for both the laity and physicians. It is more than ordinarily attractive in its type and in the size of its pages.

We do not, however, agree with the editor that a book like this can, as a whole, be made safe reading for American mothers. Parts of the work such as the chapters relating to "The Care of the Nervous System," and "The Intellectual Health of the Child," may well be appreciated by the average mother. Much of the earlier part of the book, however, contains statements, which not only the average mother would find difficult to understand, but many of these statements would indeed be questioned by physicians familiar with the advance which has of late years been made in infant feeding. The book in parts strikes the reader as being a little behind the times and as having been written some years before it was published. The discussion of proper methods of preparing an infant's food depends for its value on a correct basis of chemical analysis from which to start, and it is therefore unfortunate, to say the least, that the old analysis of Vernois and Becquerel should be introduced as authoritative. Professor Uffelmann does not seem to have a complete grasp of the subject of infant feeding as studied in the light of the latest investigations which have been made in America. Under these circumstances it seems to us that the translater is decidedly reversing the proper source from which "grateful acknowledgment" should come, when in her introduction she says, "The author has freely availed himself of American reports and statistics, with a liberality so rarely shown by European writers that it calls for grateful acknowledgment." Why the giver should be grateful to the receiver it is difficult to see, but perhaps we are wrong in doubting whether the best on all medical subjects must necessarily emanate from European sources.

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IS IT POSSIBLE FOR CRIMES TO BE COMMITTED UNDER HYPNOTIC INFLUENCE?

THE question whether there is a likelihood that crimes will now and then be committed under hypnotic influence, has been answered differently by different authorities; some, as Charcot and the Salpêtrière School, maintaining that little danger is to be apprehended from this source, others, as Brouardel and Bernheim, answering the question in the affirmative.

The sentence not long ago of a hypnotizer to penal servitude, for procuring from a somnambulent a check for 10,000 francs, brings home to us, says the *New York Times*, as a practical matter, the possibilities for crime which the facts of hypnotism offer.

Per contra, in a famous murder case tried in Paris last year (the Eyraud-Bompard trial[1]) in which one of the defendants claimed irresponsibility on account of being under hypnotic influence, the jury did not allow the plea.

In a recent work "On Hypnotism and the Analogous States, from a Medico-Legal Point of View," Gilles-de-la-Tourette traces the history and development of hypnotism from the days of Mesmer, the charlatan, to the recent date when Charcot undertook the study, in 1878, as a purely scientific question. He is of opinion that as aids to crime by suggestion the abnormal states comprehended under that term are of extremely little account in real life, however startling some of the effects may be in the experimental laboratory. Rape is, according to this writer, the only crime which has thus far been accomplished with the aid of hypnotism under the form of lethargy.[2]

On the other hand, Brouardel's report to the French government presents striking facts to substantiate the view that hypnotism, in the hands of unscrupulous performers, may be made a powerful instrument of crime. Perfectly conscientious persons, under the influence of hypnotic suggestion, were made to take the initiative in deeds of revolting criminality.

[1] See page 73 of the Journal of January 15, 1891.
[2] Quoted from Sajous's Annual.

In a lecture lately given in the amphitheatre of the Salpêtrière,[2] Dr. Auguste Voisin discusses what he calls "a crime of arson committed by a person while in the hypnotic sleep." His illustrations belong rather to the department of laboratory experiments than to real life. Should such a crime be committed, he says, there is a sure way of detecting the true culprit. Hypnotize the individual who has committed the criminal act; interrogate him while in this second state, "and his conscience, now become free, will compel him to tell the truth and criminate the man who instigated the deed." It was in this way, Voisin says, that he brought out the truth in regard to a female who had been sentenced to Saint Lazare for larceny, obtaining the discharge of the prisoner by proving that for several months she had been under hypnotic influence while committing repeated thefts which had been "suggested" to her in this irresponsible state.

Any discussion of this subject would be incomplete that did not allude to Kingsbury's article in a late number of the *Nineteenth Century*, also Crofut's article in the *North American Review* for August, 1888.

Kingsbury's paper is entitled "Hypnotism, Crime and the Doctors." He begins by contradicting the assertion almost universally believed in, that hypnotism can make the subject believe, feel, or do anything that is suggested to him, regardless of his moral convictions or even his natural instincts. This he asserts to be absolutely erroneous, only about fifteen per cent. among patients being susceptible to the influence. He bases his figures on his own practice and on the experience of Continental physicians. He states that while this percentage may pass into a condition of somnambulism, only a very small number can be reduced to that state of utter irresponsibility which is popularly supposed to be the state of every hypnotized person.

Kingsbury demands that ignorant dabblers in hypnotism be restrained by law from trying experiments; that public exhibitions of hypnotism, being generally made with subjects hired for the occasion and adapted to the production of sensational effects, be prohibited; that all employment of hypnotism, although he would not confine it to medical practitioners exclusively, should be restricted in the same way as vivisection, to men who devote themselves to it scientifically, and should be practised by license only.

Crofut's article is entitled, "The Open Gate of Dream Land." He professes to write from large experience. He devotes considerable space to the question whether crime can be committed by the aid of hypnotism. He thinks that instances must be very few where the mesmerized subject can be so dominated by the hypnotizer as to lose the natural moral sentiments. To quote his words: "A young lady, one of the brightest sensitives I have ever seen, steadfastly refuses to play cards. I tell her she is Buffalo Bill, and easily induce her to assume his character, but when cards are suggested, 'No I never play cards. It is wrong!' she says, and I cannot move her. I could make her jump out through the window, or put her hand in the fire, but play cards she will not. I was puzzled by it, till on inquiring I ascertained that her religious parents had brought her up very strictly, and taught her that it was wicked to play cards."

Other instances of a similar kind are adduced. "The conduct of hypnotized subjects," he says, "cannot be positively predicted. The mental impression may not in a given case be sufficiently vivid and dominating to induce action, or the intention may be counteracted by the trained moral sense asserting itself and overbalancing the confused hypnotic tendency."

As for the *ability* of the hypnotized person to accomplish at a distance and while in the somnambulic state acts suggested by the hypnotist, this writer speaks very doubtfully. "A mesmerized person sees nothing but his ideal realm, the world of transient hallucinations in which he dwells. He is in a state of somnambulic coma, and his fancies are insane delusions, bearing no relations to the actual things around. Mesmerized sensitives are bewildered and helpless when away from the mesmerizer, and I have seldom seen one who was sufficiently self-controlled to go even a hundred feet away from me and do anything he was told to do." This has been the experience of other experts, as Lollingwolf, who has sent out hypnotized subjects to execute some command, and has known them to wander blunderingly about the yards of private houses, thinking they were in the street, or fall down in the street in a state of lethargy. It would seem from this last writer's statements that such abolition of the moral instincts as would make the mesmeric subject (or "responsive," to use the technical language of certain of these authorities) a ready perpetrator of criminal acts can only accompany a profound somnambulic condition in which the individual is unconscious of his surroundings; he would, in fact, have a very low opinion of the moral status of any person who, however much in *rapport* with the hypnotist, could be influenced by suggestions to crime while in the waking state.

From what has been said, it will be seen that the hypnotic influence may, in some instances, be abused to the detriment of others by unscrupulous persons, though the danger from this source is easily exaggerated; the conclusion, at any rate, is legitimate, that hypnotism is a power which should be exercised cautiously, conscientiously, and under restrictions and conditions which should be clearly defined.

[2] Bull. Gén. de Thér., Aug. 30, 1891.

INDEX CATALOGUE OF THE LIBRARY OF THE SURGEON-GENERAL'S OFFICE. VOLUME TWELVE.

"Of late years those physicians in this country who make use of medical literature in connection with their investigations or writings, have, for the most part, become acquainted with the resources of the 'Library of the Surgeon-General's Office,' as it is offi-

cially designated, and many of them are much interested in its progress and prospects." [1]

Such is the opening sentence of an article on "The Condition and Prospects of the Library of the Surgeon-General's Office and its Index Catalogue," by its librarian.

If an additional stimulus to the general interest in our national medical library were needed, it could be found in the new volume of its "Index Catalogue," which carries the index to *Shuttleworth*, and adds to it 20,251 author titles, representing 8,022 volumes and 18,090 pamphlets. It also includes 6,603 subject-titles of separate books and pamphlets, and 18,956 titles of articles in periodicals.

The first twelve pages of the present volume are taken up with the "Fifth Addition to the Alphabetical list of Abbreviations of Titles of Medical Periodicals employed in the Index Catalogue, published in the Seventh Volume." These additions have been published annually for the last five years, and the present number represents one hundred and seventy-six hitherto unmentioned periodicals received by the library, which with few exceptions, are new periodicals which have sprung into existence within the year. Many of them are annuals, and reports of Congresses; but counting only such periodicals as from their titles may be called medical journals, and which are published at least as often as once in three months, there appear to be twenty medical journals which have sprung into existence in the United States during the past year, besides four journals which have either changed their titles or resumed publication after a temporary suspension. This is too large a number to represent actual additions to medical literature, but if the new journals are to be regarded as medical newspapers, they may be considered as representing an actual educational advance.

Veterinary surgery and comparative pathology are assuming an important place in the library, if we may judge by the additional veterinary journals, and the titles to be found in the text under the heads of "Sheep," "Sheep Pox," "Rumination," and "Ruminants."

It is not worth while to enumerate the different subjects indexed in this volume, but it is of interest to note that the present series of the Catalogue will be finished, if expectations are realized, in three years, when subjects will have accumulated sufficient for an additional five volumes.

MEDICAL NOTES.

Rush Medical College. — At the opening of the session of the Rush Medical College in Chicago, on September 29th, a bronze bust of the late Dr. C. T. Parkes was unveiled, with appropriate ceremonies.

The Intercontinental American Medical Congress. — The Committee on Permanent Organization of the Intercontinental American Medical Congress will meet at the Lindell Hotel, St. Louis, on October 14th. It is intended at this meeting to (1) adopt a constitution; (2) elect permanent officers, domestic and foreign; (3) select the time and place of meeting. Members of the auxiliary committees of the different States are invited to be present.

Gaceta Medica Quezalteca. — Under this title the first number of the first medical journal published in Guatemala appeared on September 1st. It is to be published in Quezaltenango on the 1st and 15th of each month.

The American Electro-Therapeutic Association, which was organized last February in New York, held its first annual meeting in Philadelphia, September 24th to 26th, under the presidency of Dr. E. Betton Massey. A large number of papers were presented.

Changes in Foreign Universities. — Dr. Carl Maydl, extraordinary professor of surgery in the University of Vienna, has been appointed ordinary professor of the same subject in the Czech Medical Faculty of the University of Prague. Professor du Bois-Reymond has been elected Dean of the Medical Faculty in Berlin. Professor Gartner, of Jena, has been appointed to the chair of hygiene at Marburg, vacant by Professor Rubner's appointment to succeed Koch in Berlin. Mosetig-Moorhof has been given charge of the second surgical department of the Vienna General Hospital, formerly under the charge of Salzer, deceased.

Regulations Regarding Poisonous Drugs. — The German Bundesrath has issued a series of regulations bearing on the sale of poisonous drugs. A long list of drugs is printed which are only to be sold in retail on the prescription of a medical man, a dentist, or a veterinary surgeon, and a fresh prescription, properly signed and dated, is to be required for every fresh supply furnished. All fluid medicines for internal use are to be dispensed in rounded vials, and the label is to be of a white ground, whilst medicaments for external use are to be dispensed in hexagonal bottles with three of their surfaces plain and three fluted, whilst the ground color of the labels is to be red. These regulations do not come at once into force, however, and as they are permissive, each State will enforce them or not as they think best.

Famine in Russia. — A despatch from St. Petersburg announces that in addition to the scarcity of food which has caused untold suffering, the distress has been intensified by the enormous number of unusually disastrous fires that have occurred throughout the famine-stricken districts. In many of the districts entire villages have been destroyed. What little food it is possible for the peasants to obtain is of the vilest description. In many cases their only food is the sweepings and refuse from the flour mills. In Saratoff the land-owners found this refuse so injurious to their cattle they would not feed it to them. But, though it was not fit for cattle to eat, the land-owners

[1] Journal, page 344.

made bread of it, and sold it to the peasants. Bread made of finely chopped straw and bran mixed with a very small quantity of rye, is considered a godsend. In many districts the starving peasantry are not able to procure even these miserable substitutes for nourishing food, and are reduced to dire straits to procure anything that will prolong life. A circular has been issued by the Minister of the Interior, which enumerates thirteen governments in which the people are completely famine-stricken, and eight in which a partial famine prevails.

TRICHINOSIS ON BOARD SHIP.— The German medical journals, as well as the daily press, have recently been saying harsh things about the American hog, basing their remarks on the report of the outbreak of trichinosis on board the Bremen barque *Nixe* at Iquique, owing, as was at first believed, to the crew having eaten pickled pork of North American origin. The occurrence was pointed to as fully justifying the exclusion of American pork and bacon from Germany. It turns out, however, that the inculpated pork was undoubtedly Chilian, and was purchased in the market at Iquique; furthermore, it was not pickled at all, but fresh, and it appears to have been eaten raw by the crew. Of the seventeen men who partook of the stuff, all suffered from trichinosis. The incident would seem to point the moral, not so much that American pork is unsafe to eat, as that the habit of eating pig's flesh uncooked is dangerous as well as disgusting.

BOSTON AND NEW ENGLAND.

HARVARD MEDICAL SCHOOL. — The number of new matriculants this year thus far is 156.

MEDICAL ATTENDANCE IN THE JURY-ROOM. — The sanctity of a jury-room appears to be so well guarded, that even in case of sudden sickness, a physician may not enter except after due process of law. In the Foss Will case, tried recently in Boston, the jury were deliberating, when, late in the evening, one of them was suddenly attacked, with what proved to be a stroke of apoplexy. The officer in charge notified the deputy-sheriff, who, not having authority to let any one into the jury-room, drove across the city and informed the sheriff, but even this official was not high enough to act, and another expedition started in search of the judge. As the latter happened to be at home, the requisite order was obtained to summon a doctor.

CITY HOSPITAL IN MALDEN. — The corner-stone of a new city hospital was laid in Malden, Mass., last week.

DIPHTHERIA IN MELROSE. — A large number of cases of diphtheria have recently occurred in Melrose, Mass. It is reported that an investigation has disclosed the fact that the disease can be traced to the milk-supply.

NEW YORK.

THE DEATH-RATE.— During the week ending September 26th, there were reported 811 deaths, an increase of 83 over the number reported in the week previous. This increase was no doubt due in great measure to the unusually warm weather that prevailed, and of the 116 cases of deaths from diarrhœal diseases reported, 104 were in children under five years of age. There were 24 deaths from typhoid fever, as against 19 the week previous.

POLICE MATRONS.— At last the cause of decency and humanity in the matter of police matrons, has triumphed in New York. Three were appointed on September 29th, and thirteen more are to be selected as soon as provision can be made for them at the station-houses.

SMALL-POX AND QUARANTINE.—When the steamer *Waesland*, from Antwerp, reached quarantine on September 9th, her captain reported that during the voyage a steerage passenger had died of small-pox and been buried at sea. Health Officer Smith at once had the vessel fumigated, and transferred the 800 steerage passengers on board to Hoffman Island, where they were vaccinated and detained under supervision until September 23d. During this time one case of small-pox developed, and the patient was at once taken to the hospital on North Brothers Island. It was then deemed safe to allow the rest of the passengers to come to the city; but, unfortunately, it proved a little too soon. Since then no less than eleven cases have been detected among these immigrants, and it is possible that others may have developed among those who have already started for the West. This has put the officials of the Bureau of Contagious Diseases on the alert, and every precaution has been taken to prevent a further spread of the disease. Since the discovery of these cases the Bureau has vaccinated over two hundred and fifty persons living in or near the premises where the patients were found.

AN EPIDEMIC OF DIPHTHERIA, the origin of which has apparently not yet been determined, prevails at Coegman's, on the Hudson, and Dr. J. G. Mosher, the local health officer, has ordered the public school closed. One of the teachers is reported at the point of death. All social entertainments have been abandoned, and some families with small children have left the village to remain until the danger is past.

Miscellany.

AN EXPERIMENT IN HUMAN STIRPICULTURE.

AT the meeting of the American Association for the Advancement of Science, held in Washington in August, a paper was read by Mrs. A. N. McGee, describing an extensive and systematic experiment in human stirpiculture, carried on during the years 1868 to 1879 in Central New York. The originator of the experiment was a zealous but logical enthusiast, the late John Humphrey Noyes; the purpose was the promotion of sanctity; the place and the means were the Oneida Community. In early life Noyes founded the peculiar sect called perfectionists, which in 1848 gathered disciples to the number of eighty-seven at

Oneida. Here the community of goods and also of persons were practised.

Until 1868 the birth-rate in the community was carefully limited, but at this date, financial success being assured and the members having increased to 250, the experiment in stirpiculture was begun. Its object was the increase of sanctity in succeeding generations, in order that sin, disease and finally death might be abolished. Physique, intellect, hereditary qualities, mutual attraction, etc., were secondarily considered.

The first principle of this stirpiculture was continued in-and-in breeding with a judicious mixture of foreign blood from time to time. Its second principle was the careful selection of individuals. From 1869 to 1880 many children were born in pursuit of this plan. Of these five died at birth from unforeseen causes and one child was acknowledged a failure physically. Otherwise the experiment was progressing admirably, the children were given the best of care, when an unexpected result caused the failure of all Noyes's plans. The spirit of monogamy, ruthlessly kept in check before, became so strong in consequence of the mating of one-quarter of the community for stirpicultural purposes that the complex marriage system was given up in 1879. The dissolution of the Oneida Community by mutual consent followed a year later.

Of the stirpicultural children only one has since died. The others, now aged from eleven to twenty-two years, are, on the whole, somewhat above the outside average in physique and intellect. The blood of the children came largely from farmers and mechanics, with a strong infusion from the intellectual Noyes family. It is therefore noteworthy that of the oldest sixteen boys ten are in business as clerks, foremen, etc.; one is a musician of repute, two are students of law and medicine, two at college and only one following a manual occupation, being a mechanic. Of the oldest six girls, two are at college and one is a student of the kindergarten system.

In conclusion, Mrs. McGee said that the main object of the experiment has not yet been attained. Only one of the children is a perfectionist, and he was born of an uncle and neice. Of the rest, but few are regular church members. This experiment would therefore seem to show that while the race could doubtless be improved by more attention to stirpiculture, yet when directed to the perpetuation of a belief, success cannot confidently be expected.

SHORTENING OF BIEDERT'S METHOD FOR FINDING TUBERCULAR BACILLI IN THE SPUTUM.

Dr. Kronig [1] has applied the centrifuge to the examination of the sputum, with the result that a considerable number of tubercular bacilli were found in a case where the ordinary method had failed to reveal them. The sputum was diluted with a solution of caustic soda, and on the application of centrifugal force for five minutes, a somewhat compact sediment was separated, which gave the above result on examination. By Biedert's method the sputum so diluted has to stand for two or three days to allow of the precipitation of the bacilli. Professor Litten has explained the application of Stenbeck's centrifuge to purposes of clinical medicine.[2]

[1] Berlin, klin. Woch., July 20. [2] See page 121 of the Journal.

TWO RECENT CONTRIBUTIONS TO THE SUBJECT OF PRE-HISTORIC SYPHILIS.[1]

In an exhaustive discussion of the question of the existence of syphilis among the inhabitants of America before the discovery by Columbus, Hyde,[2] after an elaborate historical review, revealing an epidemic in Spain, just about the time of Columbus's sailing, describes many instances of the discovery of bones bearing what has been supposed to be unmistakable evidence of syphilitic lesions. One element, however, he says, he has been wholly unable to establish beyond a peradventure, namely, that the bones, which he has examined either directly or from photographs, were genuinely pre-historic; and, moreover, he does not think that any means exist of proving that the lesions found on the bones were produced by syphilis and nothing else but syphilis. Dr. Hyde says that until we are able to prove beyond a doubt that the burial places of these bones have never been interfered with since pre-Columbian times, we cannot be absolutely sure that syphilis existed among the Indians of those early days.

Contemporaneous with this article in this country, Proksch,[3] writes about the probable existence of syphilis among the old Egyptians. In studying a papyrus containing instructions for the management of different manifestations of a disease known to the old Egyptians as *uχedu* (so spelt in the original article), Proksch traces out syphilis. The papyrus gives the treatment for *uχedu* in the anus, in suppurating wounds, in the mouth, in the eyes, in the bones, in tumors of the head, in the body, in pustules, etc., herein giving an almost complete history of the various situations in which syphilis may manifest itself. The author concludes that *uχedu* of the old Egyptians is our syphilis.

TETANUS NEONATORUM OF ST. KILDA.[4]

St. Kilda is a small island of the Hebrides group on the West coast of Scotland. It lies far out at sea, and the population consists of but eighteen families. From time to time the prevalence of tetanus neonatorum on the island has been noticed. A description of the disease has recently been published by a nurse who has spent a year on the island. Not more than one out of every four or five children born survives, the vast majority succumbing to this terrible malady. The trismus generally appears at about the fifth or sixth day, and coincides in its commencement with the separation of the umbilical cord. At birth the children look plump and healthy, and, so far as can be seen, no abnormality is present at the umbilicus either before or after separation of the cord. The illness begins with a low, whining cry, and usually terminates in death within twenty-four hours. The child is seized with a series of opisthotonic convulsions, in which the fists are clinched, the jaws tightly closed, and the spine curved. The fits recur every quarter of an hour until death from exhaustion takes place.

The natives are not robust. They live in small, dirty, ill-ventilated houses, with every condition favorable to the development of the disease.

[1] University Medical Magazine, October.
[2] American Journal of Medical Sciences, August, 1891.
[3] Archiv für Derm. und Syph., June 20.
[4] Glasgow Medical Journal, August, 1891.

RUPTURE OF THE STOMACH.

Dr. Key-Aberg publishes in a Scandinavian medical journal an account of a case in which the stomach of a patient seemed to have been ruptured from the use of a stomach-pump.[1] The patient was a man who had taken fifteen grains of opium with the object of committing suicide, and who had not been brought to the hospital until three hours had elapsed. Under these circumstances the stomach was washed out somewhat hastily several times; each time it was remarked that only a portion of the water that had been injected returned. The patient died three hours after admission. At the necropsy it was found that the small curvature of the stomach had sustained several longitudinal ruptures, which, however, were confined to the mucous coat. The author was induced by this observation to make some experiments on dead bodies, which showed that an injection of three or four quarts of water into the stomach under a pressure of about ten inches of water produced similar injuries, and that these gradually increased, and ultimately became complete ruptures through the whole of the coats of the organ.

THE INFLUENCE OF BITTER AND AROMATIC SUBSTANCES ON GASTRIC SECRETION AND ON DIGESTION.

The action of bitter and aromatic substances on gastric digestion has been a subject of much controversy, although their use in therapeutics has been long established.[2] Some believe that bitters stimulate the stomach to greater secretion of mucus, and interfere with the digestion of albuminoids; these consider that any increase in the secretion of gastric juice resulting from their use is a pure supposition. Others, again, consider that bitters excite the function not only of the gastric glands, but also of the muscular walls of the stomach. Professor G. Marcone (*Riforma Medica*, June 8, 1891) has endeavored to settle the question on a sound physiological basis. He has studied the action of sixteen drugs belonging to the various groups of bitters, aromatics, and stimulants, and finds that all, without exception, cause increase of the secretion of gastric juice. Mixing the drug with food, prepared always in the same manner: the period of digestion is shortened; the quantity of gastric juice is increased; the movements of the stomach are more active and more efficient, and the gastric juice, increased in amount, retains its full digestive power. Introducing the drug into the empty stomach: the quantity of gastric juice is increased, and the juice retains undoubted digestive power. These results were verified by control observations made with distilled water in place of drugs. In order to ascertain, if possible, whether the action above observed was of local or reflex origin, the vagi were divided in the neck previous to the introduction of the bitter substances. Under these circumstances the contents of the stomach did not increase, and, notwithstanding an increase of acidity, the digestive power of the juice was much diminished. Marcone therefore concludes that the greater part of the effect of bitters is due to stimulation of the vagus endings in the stomach, whence by a reflex action both the secretion and the peristalsis are increased.

[1] Lancet, September 19th.
[2] British Medical Journal, July 4th.

THERAPEUTIC NOTES.

Brandy with Egg. — To administer brandy to infants, Eloy[1] recommends the following:

℞	Brandy	ʒ i.
	Cherry-laurel water	gtts. v.
	Yolk of egg	No. ij.
	Powdered sugar	ʒ vi. M.

To be given in the course of a day, a small spoonful at a time.

Euphorine.[2] — Euphorine, or phenylurethan, which was discovered by Sansoni, is a white crystalline powder with a slight aromatic smell, and readily soluble in wine, which forms a convenient medium for its administration. Sansoni prescribed it in cases where antipyretic, antiseptic, antirheumatic, or analgesic action was required, and stated that it was free from any objectionable action, such as occasionally follows antipyrin, antifebrin, phenacetin, salicylate of soda, and other drugs of a similar class. A number of recent observations have been made, especially on rheumatic cases, in Professor Stiller's wards in the Jewish hospital in Pesth. In three cases of supra-orbital neuralgia, and in three cases of sciatica, a cure was rapidly effected, a case of chronic nervous headache was decidedly improved, two cases of rheumatic fever were cured, but in another which was complicated with endocarditis no improvement was obtained, though here salicylate of soda was more successful; in nine cases of chronic articular rheumatism good results of a more or less permanent character were obtained; in three cases of muscular rheumatism a rapid cure resulted; and, lastly, in six cases of habitual hemicrania seen in private practice, the remedy produced an almost magical effect. The doses employed were from three to six grains, and were repeated from three to five times a day.

The Iodides in Scrofulous Children.[3] — Iodine and iodoform give better results than the alkaline iodides. To young children tincture of iodine may be given, one drop daily in a little thin porridge made of farina and milk. Besnier[4] prefers the use of iodoform, which may be given continuously for a long time. He prescribes it after the following formula:

℞	Iodoform	gr. iss.
	Mellis	ʒ iv. M.

Kerosene as a Disinfectant for Instruments. — Lavrentieff[5] finds that by keeping surgical instruments immersed in kerosene perfect asepsis is secured, and that the instruments do not become corroded.

[1] Rev. de Clin. et de Thér.
[2] Lancet, July 4.
[3] Am. Jour. of Med. Sci., September.
[4] Le Bulletin Médical, 1890, p. 595.
[5] Saratovsky Sanitarnyi Obzor, No. 9, 1891.

Correspondence.

ROME AND HER HOSPITALS.

Rome, August, 1891.

Mr. Editor: — The time is not far off when the next International Congress meets, and as the "City of the Seven Hills" has been selected as the place for this important assembly, it may be of some interest for those who may contemplate making the journey but who are unacquainted with the climate and surroundings of this ancient and yet famous city, to learn something regarding them.

To begin with, an impression commonly prevails that the

summer season in Rome is unhealthy, that the atmosphere is malarial, and that the heat is unbearable; besides, that it is an old, antiquated centre, out of the range of ordinary travel, and of little interest to any one, other than the theologian and historian. These, however, are all positive fallacies. The sanitary condition of the city is not only excellent, but I believe is unrivalled in every other city in Europe or America.

In its water-supply Rome leads the world, — with its thousands of fountains in every conceivable form and situation through which issue jets and streams of pure, limpid water, so cool at all times that no ice is needed to reduce its temperature. Indeed, a small ocean must be delivered from the Appenines, through the ancient and modern aqueducts, which lie deeply buried, and course under the earth's surface in every direction.

The early founders of Rome, too, were well versed in physics, in hydrostatics; for its system of drainage and sewerage seem to be ideal.

I am credibly informed, that there has been no malaria of a severe type in Rome for many years, but that, in its out-lying, adjacent districts, there are yet seasons when its most serious manifestations are encountered.

The dwellings, churches, and public buildings are all well ventilated. And one will scarcely walk a hundred yards in any one direction without coming into an open space — a piazza. Many of these are sheltered by the leafy olive and are delightfully cool and quiet places, where, while resting the body, one can occupy his mind in the contemplation of what Rome, in past centuries, has accomplished in the arts and sciences. That the early founders of this city were hygienists of the first order, centuries of time have inevitably demonstrated.

Rome is not behind in hotels, either in quality or number. The accommodations are excellent and the rates moderate, generally less than in Paris or London. For vehicles, there is an abundance of victorias and of one- or two-horse street-cars and busses, running early and late, with the rate for travel, in all, about half the American.

In a general way, we can conceive of no city in the world of greater interest to physicians.

With regard to the weather, I must say that there is no such oppressive heat here, as we have in New York, in all our southern cities, and, in the greater part of those in New England.

The city is clean, orderly, and well policed.

Until quite recently, it is said, Rome was not well provided with hospital accommodations; but since "75" several monastries have been appropriated by the medical brethren, and utilized as hospitals. They are not all that one could desire, yet, they are large, commodious and well lighted.

St. James's Hospital (on the Via Corsa) is the principal surgical hospital. There is a large and active service here. In one ward I saw twelve women who had been laparotomized in one month. In this hospital their results are marvellous, as I was informed by Professor Leoni and Dr. Bastianelli, that in their last two hundred cases of laparotomy they had but *one per cent.* mortality.

The Consolation Hospital (*Ospidale Consolatione, Piazza del Forum*), is the principal hospital in the city for traumatic surgery. Here, Professor Postempski has, within a month, performed his fourteenth abdominal section for penetrating wounds of the peritoneum, all inflicted with a blade, mostly the stiletto. Every one of his patients recovered.

The Hospital of the Lateran (*Ospidale del Laterano*), contains four hundred females, forty beds being exclusively employed for gynecological cases. This is a very fine building with two, long, airy, high stretches of the walls of Cæsar's time coming to an angle and enclosing the yards.

There is one institution here for consumptives, almost exclusively. It contains nearly three hundred patients, and was well known for being the principal Italian hospital in which Koch's lymph was tried. It has been wholly rejected.

Chloroform is the only anæsthetic employed. In fact, from the specimens of sulphuric ether which I saw in different places, it would seem that they do not know how to make the pure article in Europe. Many surgeons have informed me that this is why they do not more often employ it. Antiseptic solution they employ on the surface, never in the serous cavities, unless in the presence of decomposing matter. As in most of the Vienna clinics, they use nothing but silk, both for ligature and suture; and, as with the Austrian Germans, they have no trained nurses, the sisters doing the nursing, but the hospital control is under government management. Their operations are comparatively dry, as they use no irrigation, so that after the scalpel is taken in hand, they wipe away whatever may rise into the incision with pieces of gauze, which, by the way, I see has wholly supplanted sponges over here.

Altogether, Rome has hospital facilities for more than a thousand patients. This is an important item to those who, in going to Europe to attend the Congress, would like to blend business with pleasure, and see what the latest improvements are. The medical college is commodious, and their laboratory facilities are unsurpassed.

It may be said, in conclusion, that in the matter of language, every physician should have no trouble, at least in interpreting the many paragraphs and phrases chiselled into marble and granite in this city at every turn, for they are all in Latin. And if one knows a little French there will be no difficulty as very many Italians speak it, besides the affinity of the Italian to the French is so great, that, with a knowledge of one, there will be but little difficulty with the other.

It has been alleged, that Rome has not accommodation for the section meetings. Those who labor under this impression are not familiar with the facilities of Rome in this respect. As a matter of fact, for a summer or spring meeting, she could, by simply roofing over the old Coliseum, provide space for forty international congresses, to hold their sessions simultaneously.

Let us hope, then, that when the time comes, America will send a full delegation to Rome. America is indebted to Italy for very much — nay, for its very name. For to-day one can go to Florence, and there see the house still standing in which Amerigo Vespucci was born. Ocean travel is rapid and swift, and railroad trains have almost annihilated space. Travel is not so very expensive. Hence, at a small outlay one will be able to take a vacation, increase his stock of knowledge, and visit one of the most beautiful countries in the world: so that, let us hope, when the hour for opening the first session of the next International Congress has arrived America will be largely represented by a delegation of physicians worthy of her.

Yours truly

Thomas H. Manley, A.M., M.D.

It seems almost incredible that a half-century ago, on the occasion of the opening of the first railway in Germany, the Bavarian Medical Faculty denounced the innovation as follows: "Conveyance by means of carriages propelled by steam ought to be prohibited in the interest of public health. For the rapid motion cannot fail to create a disease of the brain among the passengers, which may be classed as a species of *delirium furiosum*. Even if travellers are prepared to run the risk, the onlookers ought by all means to be protected. The mere sight of a passing train suffices to cause the same cerebral disorder. Wherefore the authorities should insist on having a palisading of thick boards, at least five feet high, placed on each side of the permanent way."— *Bull. of Pharm.*

A Heavy Dose. — This is the order which a little girl brought into a Lewiston druggist's store the other day. It was written on a dirty piece of note paper, as follows: "Mister druggist: Please send ipecac enough to throw up a four-year-old girl."

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM SEPTEMBER 26, 1891 TO OCTOBER 2, 1891.

JAMES P. KIMBALL, surgeon, U. S. A., relieved from duty at Fort Supply, I. Ty., and ordered to Fort Clark, Tex.

JULIUS PATZKI, U. S. A., relieved from duty at Fort Huachuca, A. Ty , on expiration of present sick leave, and ordered to Fort Supply, I. Ty.

CHARLES B. EWING, assistant surgeon, U. S. A., will continue on duty as attending surgeon and examiner of recruits, St. Louis, Mo.

WILLIAM D. CROSBY, assistant surgeon, U. S. A., relieved from duty at Fort Pembina, N. D., and ordered to Fort Missoula, Mont., for duty.

WALTER REED, captain and assistant surgeon, U. S. A., relieved from duty as attending surgeon and examiner of recruits at Baltimore, Md., and ordered to Fort Snelling, Minn., upon completion of his duties as member Army Medical Board.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 3, 1891.

THOS. J. TURNER, medical director, placed on the retired list September 21, 1891.

J. H. HALL, surgeon, placed on the retired list September 25, 1891.

J. C. BOYD, surgeon, ordered to duty on Naval Medical Examining Board.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held on Monday, October 12, 1891, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

DR. E. G. Cutler, "Some Cases of Gastric Dilatation"; Dr. E. H. Bradford, "Aneurism of the External Iliac Artery."

G. G. SEARS, M.D., *Secretary*.

APPOINTMENTS.

LIEUT.-COL. CHARLES T. ALEXANDER, M.D., has been appointed by the President chief medical purveyor of the army, to succeed Col Edward P. Vollum, retired.

ROBERT T. EDES, M.D , has been appointed superintendent of the Adams Nervine Asylum.

C. IRVING FISHER, M.D., superintendent of the State Almshouse, Tewksbury, has been appointed superintendent of the Presbyterian Hospital, New York.

RECENT DEATHS.

PRINCE W. PAGE, M.D., M.M.S.S., of Boston, died suddenly in Breckenridge, Col., September 28th, aged fifty.

S. S. SCHULTZ, M.D., Superintendent of the Pennsylvania State Hospital for the Insane, Danville, died September 28th, aged sixty.

WILLIAM C. ASHER, M.D., of Atlanta, Ga., died September 30th, aged fifty-four.

PATRICK J. MURPHY, M.D., Surgeon of the Columbia Hospital for Women, Washington, D. C., died October 3d, aged forty-seven.

BOOKS AND PAMPHLETS RECEIVED.

Letter on Ship Sanitation. No. 13. By C. H. Leet, F.R.C.S., Liverpool. 1891.

Eighteenth Annual Report of the Board of Health of the City of New Haven, 1890.

Poisonous House Decorations. By W. B. Clarke, M.D., Indianapolis. Reprint. 1890.

Reglamento de la Sociedad Médico-Farmacéutica de Occidente. Quezaltenango. 1891.

One Thousand Cases of Labor, and their Lessons. By G. W. H. Kemper, M.D. Reprint. 1891.

Contribution to the Knowledge of Sarcoma. By William B. Coley, M D., New York. Reprint. 1891.

Transactions of the Medical Society of the State of West Virginia, Twenty-fourth Annual Session, 1891.

The Rapid Multiplication of the Unfit. By Victoria C. Woodhull Martin. London and New York. 1891.

Thirty-sixth Annual Report upon the Births, Marriages, and Deaths, in the City of Providence, for the Year 1890.

Twenty-first Annual Report of the Bureau of Statistics of Labor, March, 1891. Boston: Public Document No. 15.

Eighth Annual Report of the Superintendent of Health, of the City of Providence, for the Year ending December 31, 1890.

Charaka-Samhita. Translated into English. Published by Abinash Chandra Kaviratna. Calcutta: D. C. Dass & Co. 1890.

Opinions of the Press and Eminent Men on the Hindo Medical Publications of Pandit Avinash Chandra Kaviratna. Calcutta. 1891.

Atlas of Clinical Medicine. By Byrom Bramwell, M.D , F.R. C.P., F.R.S. Volume I, Part II. Edinburgh: T. and A. Constable. 1891.

The Scientific Rationale of Modern Wound Treatment. By Henry O. Marcy, A.M., M.D., LL.D., of Boston, Mass. Reprint. 1891.

Observations on Rational Therapeutics. The Treatment of Croupous Pneumonia in Children. By S. Henry Dessau, M.D. Reprints. 1891.

Essentials of Physiology. By H. A. Hare, B.Sc., M.D. Third edition. Saunder's Question Compends. Philadelphia: W. B. Saunders. 1891.

Ministering Women. The Story of the Royal Pension Fund for Nurses. By George William Potter, M D. London: "The Hospital" Limited. 1891.

Diphtheria, Its Natural History and Prevention. Being the Milroy Lectures. By R. Thorne Thorne, M.B., F.R.C.P., F.R.S. London: McMillan and Co. 1891.

Heat-Stroke (Thermic Fever) in Infants. By H. Illoway, M.D., Lecturer on Diseases of Children, Cincinnati College of Medicine and Surgery. Reprint. 1891.

Studies in Pathological Anatomy. By Francis Delafield, M.D., LL.D. Volume II, Part 4. Chronic Bright's Disease, September, 1891. Wm. Wood & Co. 1891.

The Relation of Concussion of the Brain and Spinal Cord to Inflammatory and Other Morbid Conditions of these Organs. By B. A. Watson, A.M., M.D. Reprint. 1891.

The Medical and Surgical Uses of Electricity. By Geo. M. Beard, A.M , M.D., and A. D. Rockwell, A.M., M.D. Eighth edition. New York: Wm. Wood & Co. 1891.

The Practice of Hypnotic Suggestion: Being an Elementary Handbook for the Use of the Medical Profession. By George C. Kingsbury, M.A., M.D. Bristol: John Wright & Co. 1891.

Pulmonary Consumption a Nervous Disease, Considered as Such from a Practical, a Clinical and a Therapeutical Standpoint. By Thomas J. Mays, M.D. Detroit: George S. Davis. 1891.

A Case of Disseminated Sclerosis, Presenting the Clinical Aspect of Primary Spastic Paraplegia, with Atrophy of Both Optic Nerves. By Dr. Charles Zimmermann, Milwaukee, Wis. Reprint. 1891.

The Pathology and Treatment of Glaucoma. Being a revised publication of the Erasmus Wilson Lectures, 1889. By Priestley Smith, Ophthalmic Surgeon, Queen's Hospital, Birmingham. London: J. and A. Churchill. 1891.

Essentials of Anatomy and Manual of Practical Dissection, together with the Anatomy of the Viscera. By Charles B. Nancrede, M.D., Professor of Surgery in the University of Michigan. Fourth edition. Philadelphia: W. B. Saunders. 1891.

A Short Manual of Analytical Chemistry, Qualitative and Quantitative, Inorganic and Organic. By John Muter, Ph.D., F.R.S.E., F.C.S , etc. First American from Fourth English Edition. Edited by Claude C. Hamilton, M.D., Ph.G. Philadelphia: P. Blakiston, Son & Co. 1891.

On the Necessary Precautions to be Taken to Obtain the most Benefit from the Climate of Nice and The Riviera. Including some Hygienic Rules for Invalids, with notes on the Advantages of Wintering Abroad, and the Climate of the Midi. By Dr. Thomas Linn, Doctor of Medicine, Faculty of Paris; Doctor of Medicine and Surgery, University of New York; Physician, Surgeon, and Accoucheur, at Nice, France.

Original Articles.

SOME CONSIDERATIONS UPON LATE SYPHILIS — AND ESPECIALLY LATE HEREDITARY SYPHILIS — MORE PARTICULARLY IN ITS SURGICAL ASPECTS.[1]

BY ABNER POST, M.D., OF BOSTON.

In speaking of syphilis I must speak from the standpoint of the clinician and student, and not from that of the pathologist or experimentalist; nor can I hope to bring forward new discoveries or new facts. The utmost I can hope for is, that by a new presentation of facts already known, I may help to systematize our present knowledge, and to incite to new observations on a subject which can best be advanced at present by clinical study.

The help which we can expect from the pathologist is limited so long as the pathognomonic entity of syphilis is unknown to us. Help from the experimentalist is wanting, since the lower animals are practically exempt from the disease, and experiment on human beings is not justified. I shall confine my remarks to such portions of the general subject as have been of special interest to myself, and it may be possible to designate certain points where study is specially desirable.

I wish particularly to draw attention to that class of cases known as late hereditary syphilis. By this term it is intended to designate syphilitics who have inherited the disease from their parents, and who have survived the early years of life in a state of more or less good health, only to show, after a lapse of years, symptoms which correspond to the late, or tertiary, symptoms of acquired syphilis. The interval after which late symptoms show themselves in congenital cases may be longer or shorter, exactly as in acquired disease. The disease may be entirely latent during the interval between the early and late symptoms, or it may have shown itself more or less distinctly. The late forms of hereditary disease are especially worthy of study, because they are not thoroughly known; the boundary lines between hereditary syphilis, rickets and tuberculosis are clinically ill-defined.

On the whole, it cannot be far from the truth to say that we have been, and I fear we are still, too slow to accept the diagnosis of syphilis in children after the age of infancy. Children with lesions that in adults would be recognized as syphilitic, or at least as suspicious, are too often classed as scrofulous, without a thought apparently of other diagnosis. There are certain children of this class who are so distinctly marked that mistake seems impossible; the sunken nose, the destroyed palate, the triad of Hutchinson, notched upper incisors, opaque corneæ with defective hearing, present a clinical total that cannot be mistaken. But all subjects of inherited syphilis are not thus marked. Other cases there are in comparative abundance, which we too easily overlook.

These late hereditary cases may be considered with advantage at the same time with the acquired cases.

All authors agree that the later forms of acquired syphilis are not, of necessity, a part of every case. Every physician whose life has been long enough to give him a perspective, must have cases in mind in which the later lesions have been wanting through long lives. Men of seventy-five and eighty rise to my mind, who must have had syphilis in their youth, who have had no other reminder of the disease than that dread of the consequences which renders miserable so many lives. Yet every doctor of experience must also have been disappointed at seeing late symptoms appear in patients who had been under his own treatment for a long time. The comparative number of cases in which the tertiary symptoms appear it is impossible to estimate. As regards the future of the youth who acquire syphilis, the greatest difference of opinion exists. On the one side, for example, is the opinion of Hutchinson[2] as given in a recent article, in which occurs the following statement: "I do not think that an insurance office would do a bad business if it were to undertake at ordinary rates young men in the early stages of syphilis. Judging from my own experience, they appear quite as likely to live long as others, and [as I have already said] the effect of treatment seems to be, in not a few instances, to improve the health rather than otherwise."

In the same article he refers to the great number of medical men he has treated for chancres acquired in the practice of our profession. In many of these cases the patient has remained under his observation for a great number of years. Of these men he says, "Several are of course dead, but I can scarcely call to mind a single one in which death, or, indeed, any material damage to the general health resulted from syphilis. In a large majority of cases these patients have, so far as I am aware, suffered nothing since getting rid of their early symptoms, and are at present in excellent health."

As an extreme contrast, one may quote on the other hand the opinion of Dr. W. R. Gowers, Lettsonian Lectures, *Lancet*, February 16, 1889: "A general survey of the treatment of syphilis, as well as the observation of individual cases, can scarcely fail to impress one important conclusion on an impartial observer. It is not easy to state this conclusion in language not open to misconstruction. In its broadest form the conclusion is, that syphilis is an incurable disease. In the form least liable to misinterpretation, and free from inexactness, it is this: There is no real evidence that the disease ever is or has been cured [the word disease being here used to designate that which causes various manifestations of the malady]."

But even the holders of the extremest views of the incurability of the disease do not regard its appearance in tertiary form as an integral part of the disease.

The relative frequency of tertiary syphilis was discussed at the Congress of Dermatology and Syphilography held in Paris in 1889, and naturally approximate opinions only were expressed.

Drysdale considered that about eight per cent. of syphilitics show late lesions when untreated.

Mauriac would put it somewhere between five and twenty per cent.

Haslund, of Copenhagen, gave the comparative numbers of the cases of secondary and late, or tertiary disease, that he had treated in hospital service, and the cases which he classed as tertiary amounted to ten per cent. (9.9) of the whole number.

Vajda, of Vienna, quoted some very interesting figures from the statistics of the Vienna General Hospital for the period of ten years, from 1868 to 1877.

[1] Read before the Congress of American Physicians and Surgeons, Washington, September 23, 1891.

[2] The Modern Treatment of Syphilis. The Practitioner, June, 1891, p. 411.

Of the total number of cases (198,718) admitted to the hospital during that decennial period, 4.7 per cent. (9,739) were syphilitics. Of the syphilitics, 6.8 per cent. (632) were the victims of tertiary lesions, or three per cent. of the general admissions, a percentage which the author, Vajda, believes to be 20 per cent. below the truth. Certainly, the term late lesions as used in the first part of that decade, would not include certain diseases of the nervous system, which, at that time, were not fully recognized as syphilitic.

Valuable as are the figures that attempt to give some sort of an answer to the question of the frequency of late syphilis, and to calculate the percentage of cases of syphilis that show late symptoms, the most valuable contribution from that Congress to our knowledge on the subject lies in the figures of Fournier, which show that in point of time by far the largest number of cases of late syphilis occur in the third year after inoculation, that from the third year on the number diminishes, and that after the tenth year it may be considered rare.

Taken in periods of five years Fournier's late cases run as follows:

First five years	1,023 cases
Second "	700 "
Third "	322 "
Fourth "	211 "
Fifth "	68 "
Sixth "	31 "
Seventh "	13 "
Eighth "	12 "

Single cases occurred in the 41st, 43d, 52d, 54th, and 55th years, making the total of 2,395 cases tabulated.

Of course, an enumeration that makes many late symptoms occur during the first five years is based upon the character of the lesion rather than upon the time of its occurrence.

It seems unnecessary to enumerate the lesions generally included under the head of late lesions, but these figures indicate that the so-called late lesions occur much earlier in the history of the disease than we are in the habit of thinking. So far as the figures go, the French Congress affords us ground for a more definite prognosis than we have hitherto possessed. We seem to be justified in saying that, after the third year, the chances of a recurrence grow steadily less, and that probably only one case in five, or 20 per cent., shows the dreaded later troubles.

Those figures embolden me to say that it is my impression that outbreaks of late symptoms in congenital syphilis are of earlier occurrence than is usually supposed. The age of puberty is the time at which such outbreaks are expected. I have no figures to confirm my opinion, but I have learned to think that it is very common for hereditary disease to show its late features as early as the 4th, 5th, or 6th years. But it must also be said of these cases that their life histories are seldom complete with the story of a single outbreak.

There is one other matter in connection with these figures to which it seems proper to refer. Syphilographers are sometimes accused of so extending the field of syphilis as practically to include all pathology. In the General Hospital of Vienna where syphilis holds so prominent a place, according to the official report for ten years from 1868 to 1877 inclusive, but 4.7 per cent. of the whole number were syphilitic, and but three-tenths of one per cent. of the whole were cases of late syphilis. Even increased by 20 per cent. as Vajda thinks proper, the number still remains smaller than would have been supposed. Incidentally, I may say here, that the Autopsy Records of the Boston City Hospital which contain accounts of approximately 1,700 post-mortem examinations, contain but nineteen cases which permit a student of these records to affirm from the words of the pathologist a pathological diagnosis of syphilis.

It is interesting to inquire if we are able to prevent the outbreak of late symptoms. As a preventive of late symptoms, early treatment by mercurials is ranked high — deservedly so far as we can see — and still it must have fallen to all of us to see cases which have been treated with care show late and grave symptoms. Most of the cases with late symptoms of which I have known the earlier history, have been late in coming under treatment, or there has been some fault in the therapeutic measures, as, to take a single instance, in a case of syphilitic hemiplegia which comes forcibly before me, the disease had existed for a year before it was recognized and treatment begun. It may be said of such cases that the disease has been allowed to get the upper-hand before the check was applied, or that they are like the early malignant cases that occasionally show themselves and defy treatment; but, still pride ourselves as we may on the effect of our interference, no method of treatment is free from relapses so far as I can discover. Syphilographers who come in contact with syphilitics who have been faithfully treated by different methods in other countries, as well as in our own, see occasional relapses after all methods. No method exists that will allow us to promise a cure, that is, an absolute immunity from the danger of subsequent attacks. It is in the nature of the disease to show relapses and late symptoms. When I speak thus despondently as to the uncertainty of treatment, I refer only to the late symptoms. But I mean to say that our present attitude towards mercurial medication is a matter of opinion simply. We believe that mercurial treatment acts as a preventive of later symptoms: a belief held I know not how long. Benjamin Bell expressed it in strong terms, but it cannot as yet be proved. The efficacy of treatment by mercurials has been established clinically since before the days of Paracelsus; the efficacy of mercurials in destroying microbes seems a sufficient explanation of its clinical action. We are then justified in supposing that more accurate pathological knowledge will allow us in the future to apply more effectively the drug we use so efficiently if somewhat empirically, now.

In thinking of late syphilis there are certain questions that almost of necessity arise in the mind. Of these the first regards its contagiousness. Are the late lesions of syphilis inoculable? Certainly the contagiousness of late symptoms must be slight, if it exists at all. I have among my own acquaintance two cases in which the disease was communicated to the wife two and one-half years after the reception of the disease by the husband. That is the latest infection which I can vouch for of my own personal knowledge, but Fournier mentions a case of infection in the sixth year. But here we meet with practical difficulty in reconciling our various statements that late lesions are not inoculable. The inoculability does extend to two and a half years, and may [exceptionally] still exist at the great length of six years; the greatest frequency of late lesions, so called, is found in the first five years. When we say that late lesions are not inoculable the proper meaning of the word late must be preserved.

The power of transmitting the disease to offspring remains long after the power of direct inoculation seems lost; but here, as in other manifestations, the disease shows its singular habit of fixing particularly upon special organs or systems. The general law of syphilitic heredity is a diminution in the activity of the virus, so that successive children show less emphatically the effects of the disease. Occasionally, however, we see a whole series of children follow one another, each with little or no apparent diminution of the virus. Almost at the moment of writing this sentence I was asked to see a syphilitic child which presented characteristic snuffles, loss of eyebrows, enlarged glands, fissures and ulcerations of the lips and anus, with sarcocele of both testes. The first child of the mother was born twelve years ago at seven months, and quickly died. Miscarriages and still-births have followed at various intervals, but no child that has survived. This child is the first by a second husband, but seems only another of the series. No questions elicit any certain proof of disease in mother or either husband.

These series of children born so markedly syphilitic are exceptional, and illustrate one of the marked peculiarities of syphilis, namely, its habit of fixing upon some system or systems in each of its victims, and expending its force chiefly upon that system. Thus in one patient the skin will show the deepest lesions, and for years the disease will repeat its cutaneous outbreaks. In another, the bones will form the chief object of attack.

I propose to say a few words in regard to several of the different systems.

Induration and enlargement of the lymphatic glands is one af the most common and characteristic symptoms of early syphilis. Beginning in the immediate vicinity of the original point of inoculation, at the time of the first outbreak of constitutional symptoms it becomes general, until in well-marked cases all the superficial lymphatics are found to be engorged. At the end of the acute stage these glands have resumed their normal condition. The relation of the lymphatic glandular system to the later outbreaks of the disease is entirely different. Engorgement of the subcutaneous glands is invaluable as a diagnostic sign in early syphilis; in late syphilis it is exceptional and almost without diagnostic value, but, according to Lancereaux, the affections of the visceral glands must be reckoned among the most constant alterations of tertiary syphilis. They bear the same relation to visceral syphilis that swelling of the subcutaneous glands bears to syphilis of the skin, that is, they are a necessary concomitant. Of subcutaneous glands late syphilis is said to occur most frequently in the inguinal, and next in frequency in the glands of the neck, especially the submaxillary and supraclavicular. In other glands its occurrence is much more rare. At first the glands are in general enlarged, indolent, movable upon each other; after a time firm cicatricial tissue fixes them to one another, and binds them to the parts beneath. If the glands soften and break down, the skin is usually involved. If the glandular gummata are concomitant with characteristic signs of syphilis they will readily be understood, but when they occur alone diagnosis is difficult and even impossible. I suppose every large surgical service presents several cases annually of enlarged glands of the neck, demanding treatment at the hands of the surgeon by the knife. The majority of the cases are evidently tubercular, and show suppuration, sometimes caseation. It has been my custom where anything in the history of the patient, or any cicatrix on the body allowed the least suspicion of a syphilis, to administer the iodides before proceeding to operation. In rare cases resolution has followed, and disappearance of the tumor. I have allowed myself to feel that in some of these cases there was a syphilitic taint. The cases are rare, but they certainly exist.

In late hereditary syphilis the part played by lymphatic glands is greater, though hardly more diagnostic. It is exceedingly common to find cervical glands enlarged in congenital cases, but not always in a form that by analogy with acquired cases would be called characteristic, and by no means so generally as so give them the diagnostic value of the enlarged glands of the early stages. Glands are often enlarged especially in the anterior cervical region, and remain indolent and painless for several years. In this form they do not assume the large size of tubercular forms, but they are generally large enough to rise above the normal level of the skin, and be evident to the sight.

In some cases suppuration takes place, and the most troublesome cases of all are those in which syphilis and tuberculosis coexist upon the same individual. This glandular engorgement renders the distinction between the scrofulous cases, so common in New England, and hereditary syphilis exceedingly difficult, and clinically in many cases absolutely impossible; but it is a fatal error to accept every case of enlarged glands of the neck in children without question as tuberculous.

Probably one reason, why in certain cases it is impossible to distinguish between late hereditary syphilis and tubercular disease of the glands of the neck, is because the two diseases coexist in the same individual. These are the cases in which the glands reach large size, suppurate, and perhaps coexist with bony disease, etc.

The syphilitic glandular tumors of inherited syphilis improve very greatly under appropriate antisyphilitic treatment, but very little under cod liver oil.

Cutaneous lesions are second in frequency to the lesions of the nervous system in late acquired disease. Of their ordinary occurrence there is little to say. There is a class of cases, the cutaneous and subcutaneous gummata, which may perhaps be particularly mentioned because of their resemblance in certain situations to other lesions. The ulcerating gumma is by no means infrequent in positions usually occupied by the primary sore, nor is it infrequent to mistake it for the primary sore, so nearly does its induration counterfeit the primary.

I remember distinctly a sore which I mistook for a primary inoculation until I learned that the patient was under treatment for syphilis by one of my most respected colleagues, and that the sore in question had come on without exposure. These cases are fairly well known at present, but so closely do they counterfeit the primary as to throw a shadow of doubt over some at least of the reported cases of reinfection.

On the lips such cases give rise to some difficulty of diagnosis, a difficulty which is aggravated rather than lessened by the too frequent application of caustics. It is here that the gumma resembles epithelioma, and is more likely to be mistaken for malignant disease than for a primary sore, but it is fortunately amenable to treatment by iodides.

Fournier speaks of a late roseola which has attracted his attention, in which the macula has a rosy aspect, and a circular contour with an unaltered centre. "For twenty years," he says, "I have seen from time to time manifestations of this character, and I have resisted the idea of calling them syphilitic; but as like cases continued to produce themselves in syphilitics I finished by thinking that we have to do with a manifestation really syphilitic; with a sort of late, if not tertiary roseola."

Such a phenomena I have observed a few times. The efflorescence is interesting as an observation, and particularly because so superficial a lesion is not usual among late manifestations. It helps to break down the boundary line already so difficult to define between secondary and so-called late symptoms.

The skin lesions of late hereditary syphilis must be less frequent than those of adult acquired disease, or at least less characteristic. The round ulcers on the legs, or the smaller circular ulcerations about the head of the tibia, or generally in the vicinity of the knee-joint do occur in children, and so-called syphilitic lupus has been recorded several times.

Most of the supposed late hereditary cases that have shown skin lesions under my observation have had tubercular ulcerations of rather irregular character which may possibly have been tuberculous. The boundary line between the ulceration of tubercle and of late hereditary syphilis is yet to be established.

In speaking of the bones, I wish to ask how trustworthy is nocturnal osteoscopic pain as a symptom of syphilis? Its extreme value is undisputed, but I believe it ought not to be considered alone as *absolutely reliable*, especially if it is referred to spots which are only exceptionaly attacked by syphilis, or in other words, it is *not impossible* that pain from other causes may be nocturnal in character. As a working diagnosis the conclusion of syphilis from nocturnal pain alone may be proper, but as a positive diagnosis which shall follow the patient through life it is insufficient; and yet I think men are allowed to suffer in reputation and in purse for a diagnosis made on such slender ground.

But if too great weight is sometimes given to nocturnal pain, on other occasions it is shunned even as a working hypothesis, when it ought to be made. The syphilitic pains of children are not sufficiently known, and may be the occasion of grave errors of diagnosis. Rheumatism and "growing pains" are called on to account for them. Many children have been treated in vain for a long time, who have rapidly recovered by the administration of the iodides.

In those cases of bone disease, especially among children, which come to operation, it is rare to find the surgeon supplement the use of his knife and gouge with internal medication. It occasionally happens that disease of the bones spreads after the removal of the diseased portion, to the surprise of the surgeon, and the discredit of his art, because he has failed to see the necessity of medication in caries of syphilitic origin, or, because if he desires to use internal remedies, he is satisfied with cod liver oil.

Disease that attacks several of the long bones simultaneously, or nearly simultaneously, should arouse the suspicion of syphilis, and particularly if one or both tibiæ are among the bones attacked. To say that it should arouse suspicion is putting it very mildly, at the same time, it would be going further than circumstances warrant to say that such a case was of necessity syphilitic.

A marked difference between tuberculosis and syphilis lies in the preference for syphilis for the long bones and their shafts, while tuberculosis attacks by preference such bones as those of the wrist and ankle.

As to diseases of the joints, they are indisputably at times the result of syphilis; but I must confess that, so far as the joint alone is concerned, in the few cases I have seen, the symptoms are hardly characteristic. Whereas, lesions of the bones themselves in their continuity in children are likely to be syphilitic, lesions of the joints are more apt to be tuberculous. In a long list of cases of hereditary syphilis Fournier reports but five cases of joint disease to eighty-two of bone disease.

Of course, no reference is here made to the cases of separation of the epiphysis known as Parrot's disease; nor to the peri-articular nodes and gummatas which simulate disease of the joint itself.

Syphilitic disease which involves the breast has recently attracted some attention. Its usual time of appearance is quite late, but like other late forms of disease it may occur quite early, as in a case of Ambrosoli,[2] in which one breast was smaller and hard very soon after the first appearance of secondary symptoms. Swelling of the second breast followed, and both returned to normal size under the use of iodides. Apparently syphilitic disease may either manifest itself as a diffuse enlargement of the gland or as a separate gumma; in the latter case it conducts itself as do gummata in other situations. The disease occurs in men as well as in women and in hereditary as well as in congenital cases. This form of syphilis is unusual, but it has occurred in the practice of two of my friends.

(To be continued.)

A CONTRIBUTION TO THE TREATMENT OF RUPTURE OF THE BLADDER.[1]

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SINCE the appearance of Mr. Rivington's monograph upon "Rupture of the Bladder," in 1884, a number of cases of intra-peritoneal rupture of the bladder have been treated by laparotomy and suture of the rent. The success which has attended these cases, and also the many instances of repair of bladders wounded during laparotomy, have gone far to establish the rule laid down by Mr. Rivington that when an intra-peritoneal rupture is made out, an immediate laparotomy should be done. The importance of early interference in these intra-peritoneal cases is so evident, that a surgeon procrastinating an operation even for a few hours cannot easily find justification for his delay.

It not infrequently happens, however, that the first symptoms of bladder rupture do not clearly show whether the rent is intra- or extra-peritoneal, and the delay necessary to settle this point allows time for an inflammation to gather headway, which operative measures are afterwards powerless to check. It is the purpose of this paper to consider the conditions of extra-peritoneal ruptures of the bladder, and to formulate,

[1] Read before the American Association of Andrology and Syphilology, Washington, September 23, 1891.

[2] Gazetta med. c. ital., Lombardia, 1884. Quoted by Newman.

if possible, rules for operative procedure, which can be applied early, without waiting for an exact diagnosis.

Usually the symptoms of rupture of the bladder are tolerably distinct, and it is not intended here to go into a consideration of them, for they have been thoroughly described in many treatises and articles on the subject. As, however, it is important, before undertaking any operative procedure to demonstrate beyond doubt, if possible, the existence of the lesion for which the operation is done, I wish to speak of the only physical test that seems to me to offer confirmatory evidence at all conclusive of bladder rupture. I refer to the injection of fluid which afterwards does not return through the catheter. This method, suggested by Dr. Weir, has served the writer well on two occasions in establishing the diagnosis of rupture of the bladder, and twice in excluding the bladder in a general injury of the abdomen, which caused a profuse hæmaturia.

In order that the evidence obtained by this method shall be reliable, the injection should be repeated several times, and care must be taken that the catheter lies well in the bladder, and that it is not occluded by clots. With attention to these particulars, if the boric solution injected does not all return, it is conclusive evidence of rupture of the bladder. Sometimes, especially in intra-peritoneal rupture, more fluid returns than is injected, and at the next injection the amount returned may be less than that thrown in. Such variations are very conclusive of rupture.

The only conditions under which this test might fail to demonstrate a rupture that existed would be when the rent was so small that no considerable extravasation of the bladder contents could take place, and in case of a valvular closure of the bladder wound, as occurred in one case through the prolapse of a coil of intestine into it.

Dr. Keen has suggested the substitution of air for water in this test, and says that if no rupture has occurred, the bladder will appear in the hypogastrium as a rounded tympanitic tumor, while, if there be a rupture, the air will fill the general peritoneal cavity. In this he only takes into account intra-peritoneal ruptures, and might altogether miss the detection of an extra-peritoneal rent. Also the gas does not admit of such exact measurement as a fluid.

Suppose now that the evidence of rupture of the bladder is distinct, and that the injection of fluid has confirmed this diagnosis, but there is still doubt whether the rupture is into the peritoneal cavity or not. The practice hitherto has been to endeavor to proceed in such a way that if the rupture is extra-peritoneal, that fact shall be found out before the peritoneal cavity is opened. This plan was adopted when the peritoneal cavity was viewed with an awe that has gradually disappeared as we have become more familiar with its tolerance of manipulation, and the fear of unnecessarily injuring the peritoneum, with the desire for an accurate diagnosis before proceeding to operation, has often led to delays which have been fatal, by allowing time for a serious inflammation to be set up.

It would seem, therefore, worth while to open the subject anew, and see whether with our modern views we find any reason for changing the older practice.

The object which the surgeon has in view in approaching an extra-peritoneal rupture is to provide adequate drainage for the urine which escapes from the bladder, and not to close the opening. Ordinarily, these extra-peritoneal rents are inaccessible to the application of sutures, and even in those cases of anterior ruptures where sutures could be placed, the tissues, infiltrated with urine, are not in a condition favorable for healing, and the danger of secondary extravasation of urine would be great.

Some writers advise that cases of extra-peritoneal rupture shall be treated by simple drainage of the bladder, either through a perineal wound, or by a retained catheter (*sonde à demeure*). While this plan may be sufficient to prevent any further extravasation of urine, it evidently affords very insufficient drainage for the urine which has already escaped into the tissues, and affords no adequate outlet for the pus and masses of sloughing tissue, which are certain to follow from the contact of the urine. It is therefore a very uncertain method, leaves the result mainly to chance, and has not been followed by a measure of success sufficient to recommend it. It is generally accepted, therefore, that drainage of the urine that has escaped from the bladder is a prime necessity.

In order then to treat an extra-peritoneal rupture in the best way, it is important that the operator should know where the rent is, and in what direction the urine is forcing its way through the loose peri-vesical connective tissue. If he has this knowledge, he can make an opening into the extravasation from the nearest available point on the surface, and can establish the most direct drainage possible. Without this knowledge he has to make his operation gropingly, and even if he reaches the extravasated urine, he may so place his tubes that the drainage is only partial and ineffectual.

A study of the reported cases of extra-peritoneal ruptures shows that the urine may be effused in several directions. It may infiltrate up beneath the peritoneum on the anterior wall of the abdomen; it may fill the tissues about the neck of the bladder; or it may escape beneath the peritoneum on one side or the other of the pelvis, and run up in the loose connective tissue towards the kidney. It is usually impossible to tell from the early symptoms, in which of these directions the effusion is to be looked for, and, indeed, it may extend in two or three directions at once.

Mr. Rivington has suggested that in cases where a doubt exists whether the rent is intra-peritoneal or extra-peritoneal, an incision shall be made into the prevesical space, and if no rupture is found in that quarter, that the peritoneum shall then be opened. The disadvantage of this plan is that if any effusion of urine is found in the prevesical space, it is impossible to tell without a good deal of separation of the tissues whether it extends down on one side or the other towards the back of the pelvis, or whether, as has happened in many of the reported cases, there has been more than one rupture, or yet, on the correct appreciation of these points depends the intelligent placing of the drainage-tubes, upon which success or failure depends. It seems, therefore, as if this incision would often leave us uninformed on important points even when the effusion is found.

Moreover, if an effusion is opened in the prevesical space, and it then becomes necessary to open the abdomen to treat an intra-peritoneal rupture, or to get a fuller understanding of the case, the operator is placed in the unpleasant position of having to open a urinary extravasation directly into the peritoneal cavity, and it will afterwards be difficult to so closely suture the peritoneal wound that no infection shall take place through it.

The cases in which the prevesical incision is applicable are those in which the rupture is in the front wall of the bladder, just above the prostate, and in which the effusion is small or circumscribed. Unfortunately, it is not often possible to diagnosticate these cases before operation, though this condition may be suspected when there is fracture of the pubes with pain and tenderness confined to the hypogastric region.

In Dr. Weir's case, which was of this sort, the symptoms were of moderate severity, and for forty-eight hours the injury was "considered as a slight urethral laceration." On the fourth day, when the operation was done, the circumscribed effusion above the pubes could be made out by percussion, and the incision was made directly into it.

Another plan proposed is to make a median cystotomy, and with the finger in the bladder to search for the rents. Harrison and Weir advocate this measure, but in a case in which Mr. Harrison applied it, a second rupture in the trigone went undetected; and it is plain that an intra-vesical exploration, even if the rents are found, will not tell us in what direction the urine is forcing its way through the tissues, and consequently leaves us in doubt as to where the drainage should be placed. So that unless we mean to rely on the simple perineal drainage of the bladder in all extra-peritoneal ruptures, we shall often be left in doubt as to the further treatment of the case even after exploration of the bladder.

How can we then best obtain a knowledge of the condition of things in a doubtful case of extra-peritoneal rupture, and so put ourselves in a position to act understandingly and efficiently? I think that this knowledge can best be gained by opening the abdominal cavity, and so getting an opportunity to thoroughly inspect and palpate the parts about the bladder.

A simple exploratory incision into the abdomen carries with it a mortality risk of from one to three per cent., while the information gained by such an inspection enables us to treat the case with so much more directness and thoroughness that we increase the patient's chances of recovery vastly more than we jeopardize them by the abdominal opening.

The following case is reported to illustrate this point: D. P. W., a strong man of about fifty-five, was seen by me in June, 1890. He had been suffering through the winter from frequent and painful micturition, and up to the time I saw him had been passing water almost continuously, the intervals being but a few minutes in length.

Upon examination a stone was to be felt in the membranous urethra, both with the sound and with the finger in the rectum.

June 6th, he was etherized for operation. A large sound was passed, and with it the stone was easily pushed back into the bladder. A boric solution was then injected preparatory to doing a litholapaxy. The injection was strongly resisted by the bladder, which was closely contracted, and the water escaped around the catheter as fast as it was thrown in. After the ether narcosis was more profound, a rubber band was tied lightly around the penis to keep the water from escaping. An ounce and one-half of boric solution by measurement was then injected, and the lithotrite was introduced. The stone was caught at the first attempt. It was very small, and required but one crushing to entirely reduce it to fragments. While the lithotrite was in, it was noticed that the bladder contracted strongly, forcing some drops of water out along the groove of the instrument. The lithotrite was then withdrawn, and the tube for washing out the bladder was introduced.

It was quickly found that while the water could be easily injected into the bladder, none of it returned, so that it presently became evident that there must be a rupture of the bladder allowing the solution to escape from it. It was at once decided to do a laparotomy in order to discover if possible where the rent was, and to repair it if it was found to be intra-peritoneal. An opening was made in the middle line, midway between the umbilicus and the pubes. There was no fluid in the peritoneal cavity, and upon examining the region about the bladder it was found that the sub-peritoneal cellular tissue lying behind the bladder and running up towards the left side of the pelvis was distended with fluid. A small bit of gravel could be detected in the loose tissue behind the bladder.

It was evident that this collection of fluid ought to be drained behind the peritoneum, and after its extent and distribution had been accurately made out, the abdominal wound was closed with sutures, and sealed with iodoform gauze and collodion. An opening was then made in the left inguinal region, such as would be used for tying the common iliac artery. Through this the peritoneum was pushed up with the finger until the space behind the bladder was reached. Fluid, colored with blood, began at once to escape in considerable quantities through this wound. A drainage-tube was introduced into the pelvis behind the bladder, with a bend in it where it passed over the iliac vessels, which were so exposed to the pressure of the tube that fears were entertained of their sloughing under it.

The patient was then put into the lithotomy position, an opening was made into the membranous urethra, and through this a tube was introduced into the bladder for perineal drainage. The finger introduced into the bladder felt a trabeculated, closely contracted cavity, but the exact locality of the rent could not be detected. A few fragments of gravel were removed. The tube in the perineal wound was attached to a longer tube which ran over the side of the bed into a bottle, and through this the urine drained very satisfactorily.

The cavity in the pelvis soon began to suppurate profusely, and to discharge many large shreds of sloughing, connective tissue. The tube was taken out after a few days, and the wound was irrigated two or three times a day. During the first few weeks injections made into the bladder escaped through the opening in the side. When the sloughs ceased coming, and the cavity dwindled down to a deep fistulous track, a small tube was inserted, and this was gradually shortened as the parts healed behind it.

It was not until March, 1891, that the opening in the groin finally closed, and the perineal tube was taken out for good. This change might probably have been made sooner, but was delayed on account of the timidity of the patient. The bladder was naturally small after such long drainage, but no smaller than it had been before the operation. He was able to hold his water only half an hour. He himself was in better condition than he had been for years, and during the spring of 1891 weighed more than he ever did in his life.

In June a little gravel was discharged through the

perineal opening, relieving some discomfort from which he had been suffering for about a month.

The rupture in this case was probably caused by the violent contractions of the bladder when the exit of the urine through the urethra was obstructed, and was undoubtedly due to the giving away of some thin-walled diverticulum, or hernial pouch of mucous membranes, projecting between the bundles of the hypertrophied muscular coat. The manipulation of the lithotrite was perfectly easy, I felt sure that the wall of the bladder was not caught in it, and although the rupture may have occurred at the first compression of the litholapaxy bulb, yet the water entered the bladder so easily as to occasion surprise, and to make me think that the rupture had already taken place. The case is a warning against the use of force in injecting even a small quantity of water into a diseased bladder.

In this case the necessity for prompt action, and the impossibility of making, upon an etherized patient, a diagnosis between an intra- and an extra-peritoneal rupture compelled us to resort to an incision into the abdomen in order to find out what we had to deal with.

The moment we had made this inspection the case was clear, and we were able to proceed intelligently to remedy the unfortunate condition.

The certainty with which we could proceed after the abdominal incision, was in such marked contrast to the condition of uncertainty before, that the question at once arose: Is not an exploratory laparotomy often a necessary first step to the intelligent treatment of extra- as well as of intra-peritoneal ruptures of the bladder?

A study of the literature of extra-peritoneal rupture of the bladder has led to the feeling that this question should be answered in the affirmative, and I believe that in many such cases a preliminary exploration of this sort will furnish information that will greatly better the chances of recovery.

I would suggest then, for your consideration, the following rules:

(1) When an intra-peritoneal rupture is made out, an immediate laparotomy, with suture of the bladder wound and subsequent drainage of the bladder should be done.

(2) When a reasonable doubt exists as to whether the rupture is intra-peritoneal or not, an immediate laparotomy should be done.

(3) If an extra-peritoneal rupture is made out, and uncertainty exists as to the direction in which the urine is extravasated, a laparotomy should be done for exploration to ascertain how the drainage may best be placed.

(4) In the case of fracture of the pubes with evidence that urine is extravasated in the prevesical space, an incision should be made in the suprapubic region, a tube should be carried to the bottom of the effusion, and a median or lateral lithotomy should be done for drainage of the bladder.

Exception. Occasionally, in cases of severe injury with much shock, when a long operation could not be borne, a median lithotomy may be hastily done for drainage, and the opportunity may be taken for exploration of the position of the rent, to serve as a guide for further interference in case the patient rallies sufficiently.

In short, a laparotomy should be done in all cases of bladder rupture except those that come under Rule 4, or those of such severity that they cannot bear more than the median operation.

These rules designed for the furtherance of early operations are only intended to apply to cases seen in the early stages. After the first few days, if the patient survives, other indications may arise to guide the operator. The urine effused may be seeking the surface at some point, and the surgeon's duty is then to open the urinary abscess, and to provide drainage for it and for the bladder.

Rule 1 embodies the already established practice. If Rules 2 and 3 are accepted, they will encourage early operations in cases where, if exact indications were waited for, the operation would probably be done too late.

Lastly, comes the question of where to make the incision, and how to place the tubes for the best drainage of effusions in different parts of the pelvis. If the effusion is in front of the neck of the bladder, and the opening has been made into it by the suprapubic incision without opening the peritoneum, the bottom of the effusion should be sought with the finger, and a drainage-tube carried down to it.

In opening the bladder for drainage in such a case it may be worth while, if there is evidence that the effusion is making its way backward, to make the lateral perineal cystotomy rather than the median, because in the lateral incision the parts about the neck of the bladder are more freely opened, and if the urine finds its way in that direction, it is afforded a sufficient outlet. By the median operation, unless the incision is carried back into the prostate, there is danger that the parts behind the triangular ligament will not be thoroughly laid open, and that any urine which found its way in that direction might not freely escape.

When, as so often happens, the effusion finds its way along the loose tissue on the side of the pelvis, and as in the case reported in this paper, up along the iliac vessels towards the renal region, perhaps no better incision can be chosen than that which is used for tying the common iliac vessels. In order to give the most direct drainage, and at the same time not to have any more pressure from the tube upon the iliac vessels than can be helped, the incision had better be made rather more towards the median line of the abdomen than is usually done for tying the iliac artery. In this way the tube goes down more directly, and does not make so sharp a bend where it dips into the pelvis over the vessels. If, however, the effusion has already reached up behind the peritoneum, above the brim of the pelvis, the incision must be made further out near the anterior superior spine of the ilium in order to give the best drainage. The finger introduced from this region can penetrate quite readily over the brim of the pelvis, and well down behind the bladder, while the peritoneum separates so easily that a considerable channel can be made, through which the sloughing connective tissue can afterwards discharge itself. Ordinarily, these anterior openings afford tolerably satisfactory drainage for pelvic abscesses, as the intra-abdominal pressure is sufficient to force out the pus even through an unfavorably placed opening.

In any case in which a suppurating cavity has formed in the bottom of the pelvis, which does not drain satisfactorily through an anterior opening, it is perfectly possible to reach it, and give it good drainage, by adopting the incision usually employed for

excision of the rectum, and removing the coccyx and one side of the lower segment of the sacrum. Such a wound as this, which bears the name of Kraske, who uses it for excision of the rectum, gives thorough access to the lower part of the pelvis, and would give excellent dependent drainage in case of an abscess which was burrowing in that region, and which did not sufficiently discharge itself through the more anterior openings.

PENETRATING PISTOL-SHOT WOUNDS OF THE SKULL.[1]

BY E. H. BRADFORD, M.D., AND H. L. SMITH, M.D., BOSTON.

PENETRATING pistol-shot wounds of the skull constitute surgical lesions, which need for their treatment strict rules of procedure, as the cases are exceedingly grave, not very frequent in the experience of many surgeons, and involve great responsibilities. Against surgical interference may be urged the fact that the chances of benefit are very slight; in favor, the general surgical instinct which prompts attempting whatever offers a possibility of success in cases where death seems certain. The number of instances where surgical interference has resulted successfully are comparatively few, and the fact that many cases have recovered without operation suggests that the improvement in these instances may have been due to accidental causes and not surgical intervention. The question, therefore, is a pertinent one, whether from the point of view of recent surgery operative interference offers better chances of recovery than non-intervention.

In drawing conclusions from the recorded facts, it is necessary to distinguish between gun-shot wounds of war and pistol-shot wounds of civil life. For, although there are no statistics to prove the fact, it is reasonable to imagine that injury from a rifle ball will be greater than that from a ball of smaller calibre. The exact mortality from rifle-shot wounds of the skull cannot be determined, as by far the greater number of them in the war died on the field without record. This is also true, to a certain extent, in civil life, as those who are killed instantly are not brought to the hospitals, but cases of instantaneous death from pistol-shot wounds must be rare, and in the majority of cases surgical treatment of some sort is solicited; and for this reason the hospital statistics for pistol-shot wounds may be considered as of accuracy in representing the mortality of this class of wounds. If, therefore, there is a possibility of recovery from gun-shot wounds or penetrating and perforating gun-shot wounds of the skull, as is well established, it is probable that the prospect of such recovery is greater in pistol-shot wounds of the skull.

The most historic case of this class of injury is one which brought such calamity to the nation that the surgical details were overlooked, and are not generally known. The surgical facts may be found in the "Medical History of the War of the Rebellion," Part I, Surgical Volume, page 305, classed among the gun-shot wounds of the skull. They are of surgical interest, and deserve careful perusal. The following is extracted from the report of the case:

A. L., aged fifty-six years, was shot in the head at Washington, on the evening of April 14, 1865, by a large, round ball from a Derringer pistol in the hands of an assassin. The wounded man was found "in a profoundly comatose condition," the breathing "exceeding stertorous."

Dr. Leale writes: "No pulsation was perceptible at the right wrist. When the head was examined, I passed my fingers over a large, firm clot of blood, situated about one inch below the superior curved line of the occipital bone and an inch and a half to the left of the median line of the same bone. The coagulum I easily removed, and passed the little finger of my left hand through the perfectly smooth opening made by the ball, and found that it had entered the encephalon. As soon as I removed my finger, a slight oozing of blood followed, and his breathing became more regular and less stertorous. After the administration of a small quantity of brandy and water, of which a mouthful appeared to have passed into the stomach, the patient was removed to a neighboring house. The pulse was very feeble and vacillating, from 40 to 48; the respiration was oppressed and labored; the surface was cold. Over the left eyelid there was slight ecchymosis. The pupil of that eye was slightly dilated, the right pupil was contracted; both were irresponsive to light. Sinapisms were applied to the surface. A few drops of brandy and water placed into the fauces were not swallowed, and the attempt to administer internal stimulants was not insisted on. It was observed that when blood and cerebral matter oozed unimpededly from the wound, the condition of the pulse and respiration improved. The Surgeon-General accordingly kept the external wound open by means of a silver probe, until a Nelaton's probe being brought, he made an exploration of the course of the ball. A splinter obstructed the track at the depth of about two and a half inches. An inch and a half further on, the bulb came in contact with a foreign body, which proved to be the disk from the occipital forced out by the ball; passing beyond this, the ball was detected, at a distance of over six inches from the entrance wound. Drs. Stone and Crane, having also distinctly felt the ball at this depth in contact with the bulb of the probe, it was decided that no attempt should be made to remove it or the foreign bodies, further than to keep the opening free from coagula, which, when allowed to form and remain for a very short time, would produce signs of increased compression, the breathing becoming profoundly stertorous and intermittent, and the pulse more feeble and irregular. Notwithstanding the free oozing from the external orifice, there was evidently much internal bleeding going on, as was indicated by the excessive extravasation into the orbits, accompanied by great ecchymosis of the eyelids. The protracted death struggle ceased at twenty minutes past seven o'clock on the morning of April 15, 1865. The eyelids and surrounding parts of the face were greatly ecchymosed, and the eyes somewhat protuberant from effusion of blood into the orbits."

At the autopsy it was found there was a pistol-shot wound of the head, around which the scalp was greatly thickened by hæmorrhage into its tissues. The ball entered through the occipital bone about an inch to the left of the median line and just above the left lateral sinus, which it opened. It then penetrated the dura mater, passed through the left posterior lobe of the cerebrum, entered the left lateral ventricle, and lodged in the white matter of the cerebrum just above the anterior portion of the left corpus striatum, where

[1] Read before the American Surgical Association, Washington, September 25, 1891.

TABLE OF NINETY-ONE CASES OF PENETRATING PISTOL-SHOT WOUNDS OF THE BRAIN.

No.	Point of entry.	Operation.	Result.	Time.	Autopsy.	Remarks.	Reporter.	References.
1	Eye.	Probe.	Relieved.	10 days.			Gay.	Boston City Hosp. Rec., lxxxix, 215
2	Temple.	None.	Died.	1 hour.	None.		Fifield.	" " xcii, 158
3	Ear.	Incision.	Died.	9 days.	Frags. in dura, ball entered ½ in.	Could have been removed.	Ingalls.	" " xcv, 36
4	Eye.	Probe.	Relieved.	10 days.			Homans.	" " xcviii, 85
5	Ear.	None.	Relieved.	10 days.			Fifield.	" " xcviii, 124
6	Forehead.	None.	Died.	Few hrs.	Bullet f'nd against Occiput.		Ingalls.	" " cv, 29
7	Crown.	None.	Died.	Few hrs.	Bullet went to base of skull.	Large furrow thro' brain.	Gay.	" " cv, 266
8	Temple.	None.	Died.	Few hrs.	None.	Shock.	Homans.	" " cxxii, 36
9	Crown.	None.	Died.	Few hrs.	None.	Shock.	Fifield.	" " cxxiv, 129
10	Mouth.	Trephine, late.	Relieved.	4 months.		Nothing found at operation.	Bolles.	" " cxxvii, 116
11	Ear.	Trephine.	Died.	Few hrs.	None.	Shock of injury.	Burrell.	" " cxxxii, 241
12	Forehead.	Bone removed.	Died.	9 days.	Bullet in frontal lobe, much fract.		Gay.	" " cxxxiii, 46
13	Parietal.	Trephine, nothing found.	Died.	2 days.	None.	Clots were remov'd	Bradford.	" " cxxxvi, 69
14	Parietal.	Incision opp. side.	Died.	1 day.	None.	Shock.	Post.	" " cxlvi, 53
15	Nose.	Probe.	Died.	Few hrs.	None.		Post.	" " clviii, 203
16	Temple.	Probe.	Died.	3 days.	Hæmor'ge in temporal fossa.		Gay.	" " clix, 144
17	Temple.	Trephine.	Died.	Few hrs.	Made, not recorded		Bradford.	" " clxiv, 263
18	Nostril.	None.	Died.	2 hrs.	Meningeal hæm'ge.		Bradford.	" " clxvi, 24
19	Parietal.	None.	Died.	1 hr.	Hæmorrhage.		Cheever.	" " clxxv, 244
20	Temple.	Incision.	Relieved.	18 days.		Bullet removed fm. inner table.	Bradford.	" " clxxviii, 144
21	Forehead.	None.	Died.	2 days.	None recorded.	Shock.	Bolles.	" " clxxxi 80
22	Temple.	Probe.	Died.	9½ hrs.	Bullet passed into opp. hemisphere.	Hæmorrhage.	Gay.	" " not given.
23	Temple.	Probe.	Relieved.	6 weeks.			Smith.	London Lancet, 1879, i, 622
24	Temple.	Incision.	Recovered.	5 mos.	Died later (5 mos.) fm. cerebral soft'g.	Bullet removed, bone elevated.	Trosseau.	"Aphasia," new Sydenham translation.
25	Temple.	None.	Died.	7 hrs.	None.	Passed completely through.	Duncan.	Lancet, London, 1879, i, 863
26	Ear.	Bullet extracted.	Died.	5 days.	Meningitis.		Gamgee.	" " 1880, ii, 538
27	Forehead.	Probe.	Recovered.	5 mos.			Barton.	" " 1881, i, 248
28	Temple.	None.	Recovered.	4 wks.			Editorial.	" " 1882, ii, 21
29	Forehead.	None.	Recovered.	4 wks.			Editorial.	" " 1882, ii, 1049
30	Forehead.	Died while taking chloroform.	Died.	2 days.	Bullet an inch from occipital bone.	Hæmorrhage into ventricles.	Emrys-Jones.	" " 1883, i, 11
31	Temple.	Incision and bullet later.	Recovered.	6 wks.			Bloxam.	" " 1886, i, 397
32	Forehead.	Fragments of bone.			Bullet in left eminold process.	Trephined on 16th day by Mr. Clement Lucas. Not found.	Bryant.	" " 1886, i, 971
33	Temple.	Incision and ball in opp. temple.	Recovered.	6 wks.		Tube passed thro'h	Sidney Jones.	
34	Forehead.	Probe.	Recovered.	2 mos.		Bullet remained in brain.	Colbourne.	Brit. Med. Jour., 1879, i, 624
35	Under chin.	None.	Died.	7 wks.	Found in left frontal lobe.		Newington.	" " 1881, i, 593
36	Ear.	Probe.	Recovered.	1 mo.		No symptoms 18 m. afterwards.	Parsons.	" " 1884, ii, 759
37	Occiput.	None.	Recovered.	Few days.			Atkinson.	" " 1886, i, 149
38	Forehead.	Wound enlarged.	Died.	2½ hrs.	Passed into right hemisphere.	Shock.	Atkinson.	" " 1886, i, 149
39	Mouth.	Probe.	Recovered.	6 wks.			Atkinson.	" " 1886, i, 149
40	Mastoid right.	Probe.	Died.	16 days.	Bullet in lateral sinus.	Meningitis.	Nancrede.	Phila. Med. Times, 1881-2, xii, 540
41	Forehead.	Probe.	Died.	12 wks.	Bullet resting on cerebellum.	Death from fragments of bone.	Bobo.	" " 1881-3, xii, 171
42	Brow.	None.	Died.	8 days.	Bullet direction backward.	Death from septicæmia.	Ravogli.	Cincinnati Lancet and Critic, 1882, ix, 292
43	Temple.	Probe.	Recovered.	Few wks.		Died later from presence of ball.	Brush.	" " 1883, x, 148
44	Forehead.	Incision and probe.	Recovered.	Few wks.		Hæmiplegia for a time.	Bush.	Boston Med. and Surg. Jour., 1882, cvi, 27
45	Eye.		Recovered.	Not stated.		Was seen 65 years afterward.	Elliot.	Edinb'h Med. Jour., 1880, xxvi, 493
46	Temple.	None.	Died.	5 days.	Bullet in corp. striatum, meningitis.		Richmond.	Lancet, London, 1881, i, 596
47	Parietal.	One piece of lead removed.	Recovered.	Not stated.			Hutchinson.	Med. Times and Gaz., 1886, ii, 696
48	Parietal.	Probe.	Recovered.	Not stated.		Sev'l pieces of bone and ball removed.	McKenzie.	Gaillard's Med. Jour., 1883, xxxv, 120
49	Forehead.	Counter trephining	Recovered.	Several months.		Point of impact fd. by direction taken.	Flührer.	N. Y. Med. Jour., 1885, xli, 345
50	Crown.	Ball removed from inner table.	Recovered.	Few wks.		Longitudinal sinus lacerated.	Peterson.	" " 1889, xl, 372
51	Parietal.	Telephone probe.	Died.	?	Had been felt by probe, and then shifted position.		DeLaunoy.	N. Y. Med. Rec., 1887, xlvi, 229
52	Ear.	Probe.	Died.	?	2½ yrs. after accident, cerebral abscess from bullet.		?	Univ. Med. Mag., 1888, i, 562
53	Parietal.	Trephine late, abscess burst.	Recovered.	Several weeks.			Morton.	Phila. Polyclinic, 1883, i, 22
54	Temple.	Trephine.	Recovered.	Few wks.		Frag's removed, ball not found.	Nancrede.	Phila. Med. News, 1888, liii, 5-5
55	Temple.	Ball and fragments by incision.	Recovered.	Few wks.				
56	Parietal.	Probe and frag.	Recovered.	3 wks.			Butterfield.	M. I. Med. Rec., 1885, xxviii, 294
57	Temple.	None.	Died.	Died, 5 wks.	Ball resting on dura.	Meningitis.	Markoe.	M. Rec., 1880, xviii, 164
58	Parietal.	Operation 15th day, frag. bull. and ball.	Recovered.	6 wks.			Fredericks.	N. Y. Med. Rec., 1881, xx, 488
59	Ear.	Incision.	Died.	10½ wks.	2 abscesses in temporal lobe.	Bullet broken into small fragments.	Whittier.	B. M. and S. Jour., 1886, cxiv, 170
60	Occipital.		Died.	?		Injury to cerebellum.	Thompson.	Brit. Med. Jour., 1884, i, 767
61	Forehead.	Frag. and ball.	Died.	?	Temporal lobe bruised.	Meningitis.	Lucas.	Tr. Lanc. Soc., Lon., xii, 59
62	Eye.	Incision, bullet.	Died.	8 days.	Ball pass'd through temporal lobe.		Roberts.	Am. P. and M., Louisville, 1888, v, 57
63	Ear.	Spicular bone.	Recovered.	2 mos.		Trephine, afterwards epilepsy.	Simmons.	Nash. Jour. of Med., 1879, xxiv, 9
64	Forehead.		Recovered.	?	Meningitis from spicula of bone.	Died end of 6 years.	Gibson.	" " 1879, xxiv, 207
65	Temple.	Probe.	Recovered.	3 wks.			Bliss.	Virg. Med. Mon., 1884-5, xi, 9
66	Forehead.	Trephine.	Recovered.	Few wks.		Bullet not found.	Bamblett.	" " 1879-80, vi, 212
67	Eye.	Globe removed.	Recovered.	Few wks.			Bamblett.	" " 1879-80, vi, 214
68	Temporal.	Probe.	Recovered.	11 days.			Holloway.	Louisville Med. Her., 1879-80, i, 161
69	Orbit.	Probe.	Recovered.	2 mos.			McComie.	J. A. M. A., 1890, xv, 209
70	Parietal.	Trephine, frag.	Recovered.	1 mo.			Park.	" " 1884, ii, 325
71	Forehead.	Probe.	Died.	4 wks.	None.		Boyce.	Med. Age, Detroit, 1884, ii, 256
72	Forehead.	Probe, and frag.	Recovered.	?			Evans.	Tr. So. Car. Med. Assoc., 1887, 95
73	Temple.	Frag. and bullet.	Recovered.	Few wks.			Dudley.	Tr. Texas Med. Assoc., 1885, 271
74	Temple.	Probe.	Died.	?	Hæmorrhage.		Cassells.	Can. Med. Record, 1879-80, viii, 197
75	Temple.	None.	Died.	8 days.	Bullet frontal lobe.	Extern'l meningeal hæmorrhage.	Fenwick.	Can. M. and S. J., 1885-86, xiv, 64
76	Ear.	Trephine, ball not found.	Died.	6 days.	Cerebral softening.	Ball struck petrous bone.	Wotreosky.	Australia Med. Jour., 1880, ii, 406
77	Parietal.	Probe.	Recovered.	Few wks.		Always dull afterwards.	Stewart.	Pac. M. and S. J., 1885, xxviii, 335
78	Ear.	Probe.	Died.	2 days.	Perforation of carotid artery.		Pariol.	Comp. Soc. de Biol., 1880, vii, s.ii, 196
79	Temple.	Probe.	Died.	9 days.	Hæmorrhage under dura.	Bony frag's found.	Duplay.	Achio. dar Gen. de Med., 1878, cxlii, 1723
80	Forehead.		Recovered.	Few days.	Abscess about bullet, frontal lobe.	Epilepsy 1 month later, died.	Tuffier.	Progrè Medical, 1884, xii, 147
81	Temple.		Died.	14 hrs.		Shock.	Dudeièr.	Ylo Medical, 1885, i, 273
82	Temple.		Died.	2 days.		Large fragments and brains.	Chaintree.	Lio Medical, 1882, iii, 229
83	Forehead.	Opening enlarged.	Died.	30 hrs.	Ball in optic thalamus.	Œdema of lung.	Kohler.	Charite Annal., 1879, iv, 584
84	Forehead.		Died.	3 hrs.	Ball on quadra gemina.	Hæmorrhage.	Kohler.	" " 1879, iv, 584
85	Forehead.	None.	Recovered.	?		Dimness, etc.	Kohler.	" " 1879, iv, 584
86	Forehead.	Probe.	Died.	6 wks.	Abscess left cerebral hemisphere.	Would not permit operation.	Galloschij.	Il. Morg. Giorn. Indir. Alprog. die Med., 1882, xxiv, 564
87	Parietal.	Trephine, ball.	Recovered.				Galloschij.	" " " 565
88	Temple.		Died.	1 wk.		Meningitis.	Gay.	City Hosp. Rep., 3d series, 277
89	Temple.		Died.	1 hr.		Hæmor'ge in ventricles.	Gay.	" " " 277
90	Ear.	None.	Died.	days.	None.		Gay.	" " " 277
91	Occiput.	None.	Died.	5 hrs.			Gay.	" " " 278

A. L., aged fifty-six years, was shot in the head at Washington, on the evening of April 14, 1865, by a

lateral sinus, which it opened. It then penetrated the dura mater, passed through the left posterior lobe of

excision of the rectum, and removing the coccyx and of an assistant. The wounded man was found "in a one side of the lower segment of the sacrum. Such a profoundly comatose condition," the breathing "ex- wound as this, which bears the name of Krake, who ceeding stertorous." Dr. Leale writes: "No pulsation was perceptible at men it for excision of the rectum, gives thorough ac-

it was found. The wound in the occipital bone was quite smooth, circular in shape, with bevelled edges, the opening through the internal table being larger than that through the external table. The track of the ball was full of clotted blood and contained several little fragments of bone, with a small piece of the ball near its external orifice. The brain around the track was pultaceous and livid from capillary hæmorrhage into its substance. The ventricles of the brain were full of clotted blood. A thick clot beneath the dura mater coated the right cerebral lobe. There was a smaller clot under the dura mater of the left side. But little blood was found at the base of the brain. Both the orbital plates of the frontal bone were fractured, and the fragments pushed up towards the brain. The dura mater over these fractures were uninjured. The orbits were gorged with blood.

There is certainly no possible criticism of the treatment in this noted case; but, as a matter of scientific investigation, it may be queried whether, if the shock in this instance had not been so profound, active surgical intervention for the removal of the fragment would have been advisable or not, and, if not, what advantage was gained by the use of a probe?

In a large number of instances the surgeon has to meet such cases where the patients are not moribund, and may well consider the following questions: Whether active interference, involving the use of the trephine, is demanded as a rule in severe cases of this class; whether the removal of the bullet or of fragments should be attempted in penetrating wounds of the skull; whether to probe without the use of the trephine is advisable?

In order to add to the statistics on the subject, the accompanying table has been prepared by Dr. Herbert Smith, of Boston:

An analysis of these cases is worthy of attention. Ninety-one cases of penetrating pistol-shot wounds of the brain have been collected. Of these, 22 were found in the records of the Boston City Hospital, all the cases that entered during the last twelve years being taken according to date of entry. The remaining 69 cases were found recorded in current literature, most of them within the last fifteen years.[1] None of the cases antedated the period during which modern antiseptic treatment, in some form or other, has been employed, and no case has been included unless the bullet had penetrated the skull, or at least rested on the dura mater. As was to be expected, the percentage of recoveries in the hospital cases has been considerably smaller than in those extracted from the journals, since it may be presumed that the majority of the latter class had some special features, oftentimes an unexpected recovery, which seemed to warrant their being put on record.

Of the 22 City Hospital cases, five recovered, and 17 died, a percentage of recoveries of 22.7; of the whole 91 cases, 40 recovered and 51 died, a recovery percentage of 43.9. It is probable, therefore, that the ratios given in the following computations will in each case seem to show a better result than would be true of the whole number of such injuries, were it possible to collect them. The present investigation, however, is made for the purpose of obtaining *principles* for guidance in treatment; and the relative results of the various modes of procedure in the cases here recorded will hardly be affected by the absence of unreported cases. Moreover, the loss will probably be in those cases which die within a few hours, from shock, and since it is in this class that little or no operative interference is ever possible, as a working basis for treatment the results in the cases here given can hardly be fallacious.

[1] The table contains no cases later than 1890.

In classifying the injuries in relation to the part of the brain penetrated, it was found impossible, from the descriptions given, to make anything like a complete table of the portions of the brain traversed by the ball. The cases were therefore grouped according to the point of entry into the skull, thus giving the following table:

	Recov'd.	*Died.*
Under chin	0	1
Mouth	2	0
Nose	0	2
Orbit	4	2
Eyebrow	2	4
Forehead	8	5
Temple	9	16
Auditory meatus	0	5
About ear	7	7
Crown of head	1	2
Parietal	6	0
Occipital	1	2
Not stated	0	1
Total	40	51
Hospital cases	5	17

This may be summarized to show that, when the ball enters the skull at some point anterior to the plane passing through the external auditory meati, 25 have recovered and 34 died, out of 59 cases, a percentage of recoveries of 42.3. In 32 cases where the bullet entered in this vertical plane, or posterior to it, 15 recovered and 17 died, the percentage then being 40.6. If we except the five cases in which the ball entered directly into the auditory meatus, of which all died, the recoveries are 53.5% of the whole number. If we assume that those missiles which entered the anterior half of the skull injured the anterior portions of the brain, then these statistics will not bear out entirely the idea generally held, that lesions of the anterior lobes of the brain are less fatal than those of the posterior portions. Perhaps the greater fatality in these cases may be accounted for by the fact that in the majority the wounds were inflicted for suicidal purposes, the pistol being held close to the skull, where the bone is thinnest, and that therefore the direct injury to the brain is greater in the first series of cases than in the second. Again, most suicidal attempts are done in seclusion, and there is a considerable interval of delay before treatment is applied, so that the danger from shock is far greater, proportionally, than in gun-shot wounds received in battle, for example, since there all classes of wounds would be subject to a proportionate delay. This may explain the difference between the statistics of civil and military surgery. It is to be noted that next to the auditory meatus the most dangerous point of entry was in the temple, where, out of 25 cases 16, or 48%, were fatal.

Another series of tables (see page 402) illustrates the fatality of those cases where the bullet remained in the cranial cavity, as compared with that of the instances where the bullet perforated or was removed.

From these tables it will be seen that the mortality in the latter class is but 33.3%, while in the former it is 54%. Out of the five cases where the bullet perforated by its own momentum there were two deaths, while in six cases where the bullet was extracted by the trephine there were no deaths; and in

five other cases, where the bullet had passed through the bone, but had not perforated the soft parts beyond, requiring an incision before it was dislodged, there were three deaths. These results are what would be expected, since, generally speaking, those bullets are removed by means of the trephine which have passed but a little way into the brain, the damage to the cerebral substance being slight, and the ease and thoroughness of drainage far greater. Though the numbers are too few to warrant conclusions as to operating, yet it is very significant that 100% of the cases of removal of the bullet by the trephine were successful, while 50% of those where the bullet passed completely through the brain proved fatal. We may yet, perhaps, come to believe that the damage which the careful surgeon will do in attempts to extract a ball which has penetrated the cerebral tissues will not be greater than the injury already done by the missile. If such should prove to be the truth, very decided views may properly be taken as to the advisability of thorough search for the ball in every instance.

BULLETS LODGED.

	Recov'd.	Died.
Chin	0	1
Mouth	2	0
Nose	0	2
Orbit	4	0
Brow	3	3
Forehead	10	7
Temple	5	14
Meatus	0	5
About ear	6	4
Parietal	3	0
Crown	0	2
Occipital	1	2
Total	34	40

BULLETS OUT.

	Recov'd.	Died.
Perforated	3	2
By trephine	6	0
Incision	2	3
Total	10	5

Analyzing the cases where the ball remained in the cavity of the skull with reference to the point of entry, we find that 51, or 69% penetrated at a point anterior to the vertical plane passing the auditory meati, and of these 47% recovered, while 23, or 31% entered posterior to the same plane, in whom 10, or 43% recovered.

The following table was compiled for the purpose of showing the results of the various forms of treatment. Many of the records were incomplete in this respect, and it is probable that many more of the cases were at least probed than the table shows, though the records of trephining are probably quite correct, as so formal an operation would hardly be omitted in the account.

	Recov'd.	Died.
Trephined, ball removed	5	1
Trephined, fragments removed	1	2
Trephined, ball not removed	1	3
Fragments removed	3	5
Incision	2	1
Incision, ball removed	5	4
Probed	12	13
Nothing recorded	8	21
Trephined secondarily	3	0
Died under operation	0	1
Total	40	51

SUMMARY.

Ball removed	10	5
Operation, ball not removed	10	12
Probed only	12	13
Nothing recorded	8	21
	40	51

It would seem to show that operative interference, whether resulting in successful extraction of the missile or not, is not in itself so serious as some writers have supposed. Five out of six cases where the bullet was removed by the trephine, recovered. Out of 15 cases where the bullet was removed by various operations 10, or 66% recovered. In 37 instances of operative interference 20, or 54% recovered. Of 25 cases where the expectant plan was followed, except that the probe was passed, only 12, or 48% recovered, while in the remaining 29 cases, in which no record is made on the point under discussion, only eight, or 27.5% got well. To be classed among the latter cases, however, were those who were moribund when first seen, and where no treatment would have availed.

Turning to those cases where the bullet remained in the brain substance, the following table shows the mortality after various forms of treatment:

	Recov'd.	Died.
Trephined	6	2
Fragments removed	3	8
Probed	12	10
Nothing recorded	13	20
Total	34	40

Here again the operation of trephining has shown better results than simple expectancy. Six cases out of eight that were trephined, that is, 75%, recovered. Of 11 cases where fragments were removed all but three died, while in the 55 cases that were either probed, or in which no mention is made of treatment, there were 25 recoveries and 30 deaths, showing that, taking all the cases into consideration, the results with operation, and without operation, where the bullet remains lodged in the brain, are not markedly different.

Of very considerable interest is the large proportion of cases, 34 out of 91, or 37.4%, who lived for a longer or shorter time, carrying about with them a bullet in the brain. The following table was made to show what proportion of these cases suffered afterward with symptoms referable to the bullet:

LATER SYMPTOMS OF BULLET IN BRAIN.

	Recov'd.	Died.
Dizziness	1	0
Epilepsy	2	2
Pain	1	0
Dull and weak	3	0
Meningitis	0	3
Softening from fragments	0	4
Total	7	9

It is to be noted that many of these cases, that is, where bullets had lodged, were regarded as well within a few months after the injury, because up to that time no symptoms had supervened, so that the proportion of 16 out of 34 cannot properly represent the likelihood of after symptoms in these cases. In fact, in every case where the patient has been followed for several years after the accident there were noted more or less intense cerebral symptoms, and probably if the ultimate history of all these cases could be known, many more than the table shows would be found to have died from the injury done by the foreign body.

Of the 16 cases which were noted as having later symptoms, nine, or 56.2% died. If from the 34 cases of recovery with bullets in the skull we subtract the 16 who afterward had symptoms, there remain but 18, or 27% of the whole number injured who recovered without recorded symptoms.

The relatively large number of patients who are reported as having died later on from injury done by

fragments of bone imbedded in the brain, naturally raised the query as to how often such fragments were found and removed at operations, or were discovered later at the autopsy.

Out of 30 cases where record is made, in 15, or 50%, it is recorded that fragments of bone were found in the brain substance. In 10 cases the final unfavorable issue seems to be wholly or in part due to the presence of these spiculas of bone. In some of these cases the bits of bone were small and were in close apposition to the projectile when found; but in several instances there were large irregular fragments, splintered from the inner table, which had been carried a greater or less distance and various directions into the cerebral substance. This fact emphasizes the view that in all gun-shot wounds of the brain the problem is not a simple one of a single projectile of known size, but it must be remembered that there may be multiple projectiles, of jagged outlines, driven in various directions, causing laceration and pressure. In this connection, also, may be mentioned the fact that other foreign bodies, such as hair, bits of clothing, etc., may be carried in as well: under such circumstances it is hardly to be hoped that the wound is in an aseptic condition.

Cause of Death. — In not all of the 51 cases could the absolute cause be obtained. The following is approximately correct, and will serve as a working basis:

Shock	15	29.4%
Meningitis	9	17.6
Exhaustion	8	15.6
Abscess	8	15.6
Hæmorrhage	8	15.6
Œdema of lung	1	1.9
Septicæmia	2	3.9

Roughly speaking, 30% died within a few hours from shock; 18% died from meningitis; 16% from hæmorrhage; 16% later from cerebral softening or breaking down of bruised tissue; while the remaining 20% sank and died from the constitutional effects or from exhaustion. Of these causes of death the most frequent, namely, shock, can be but imperfectly controlled. The other classes are more under the control of surgery, and it is in these directions that we must look for future advances in this branch of cerebral surgery. The prevention of hæmorrhage by early operation, and of meningitis, abscess and death from exhaustion by the timely removal of foreign bodies and septic material will do much to better our present statistics.

With a view of determining the cause of death after the various methods of treatment, the following table was prepared:

	Shock.	Hæmorrhage.	Abscess.	Exhaustion.	Meningitis.	Septicæmia.	Œdema of lung.	Total.
Trephine and ball,	0	0	0	0	0	0	0	0
Incision and ball,	1	0	1	0	0	0	0	2
Incision late,	0	0	1	0	1	0	0	2
Probe,	1	3	5	2	2	0	0	13
Operation, no ball,	2	3	8	3	1	0	1	18
Nothing recorded,	8	7	1	2	5	1	0	24
	12	13	16	7	9	1	1	59*

* This table includes cases who died later, after apparent recovery.

It will be seen that hæmorrhage caused death in ten cases where no operation was performed, and in but three cases where an attempt was made to extract the bullet. The deaths from meningitis give a similar showing, seven cases resulting fatally when no operation was performed, and but two when a preliminary operation was attempted. On the other hand cases of cerebral softening were met with eight times after operation when the missile was not extracted, but five times after probing, and but once when no operation was performed. This is perhaps explained by the fact that these cases were the protracted ones, giving time for late consideration and operative attempt.

The following table shows roughly the duration of life after injury in the various parts of the skull:

Duration of Life after Injury.	Face.	Forehead.	Temple.	Parietal.	Crown.	Occiput.	Total.
Few hours,	1	4	8	3	2	1	19
Few days,	0	7	6	7	0	0	20
Weeks,	1	5	2	3	0	0	11
Years,	0	4	0	0	0	0	4
Not given,	0	0	0	1	0	1	2
	2	20	16	14	2	2	56

It is to be noted that in the case of wounds in the temporal region, on the crown of the head and on the occiput, the larger number died of shock. The secondary results, namely, meningitis, cerebral abscess and exhaustion from constant suppuration, are most often found when the injury has been in the forehead or about the ear.

From a study of the preceding cases the following statements have been formulated:

Penetrating gun-shot injuries of the head differ from penetrating wounds of the other cavities of the body in that it is known that the foreign body has done damage to the contents of the cavity.

The consideration of these cases is not a simple problem of the localization of a single body, because not only may the projectile be split up into a number of fragments, but there are very likely to be larger or smaller fragments of bone carried in with it.

The bullet which plows its way through the soft cerebral substance always makes a track much larger than itself, necessarily bruising the surrounding brain substance a great deal. If this broken-down tissue becomes septic, the injury needs an unusually free opening for drainage, owing to the density of the surrounding wall, and the comparative softness of the contents.

If fragments of bone are not carried into the brain tissue, and if the disorganized brain substance does not become infected, and if cicatrization or encapsulation of the bullet does take place, it is to be considered a piece of good fortune, and not due to efficacy of treatment.

Even if the bullet lodges safely in the brain, and recovery appears to have taken place, a goodly number of these patients may be expected to have more or less disabling symptoms afterward, and a considerable proportion of them succumb ultimately to the missile which they carry.

A certain number of cases must necessarily die of primary shock. Many die of hæmorrhage, but hæmorrhage is best treated when its source can be reached.

Operations for the removal of projectiles, as far as can be determined by statistics, do not seem in themselves to be especially dangerous. It is likely that the injury already done to the cerebral tissues will not be added to by the manipulations of any competent surgeon, even if he be very thorough in his search for the missile; and this is particularly true from the fact that the surgeon has still a fear of manipulating inside the cranial cavity, and violence is rarely used.

The Nelaton probe, or one of similar construction should be dropped into the canal. The telephone probe has occasionally located the ball, but has many times failed. If a hard substance is felt the latter probe will determine whether or not it is metal.

In pistol-shot wounds of the skull the dangers are not the same as in similar wounds in the abdominal cavity. In the latter there is danger of immediate death from hæmorrhage, and also from the injury caused by fæcal extravasation. In the cranial cavity the chief cause of death is the irremedial one, shock; and although septic inflammation is of almost equal importance, there is certainly nothing comparable to the danger from fæcal extravasation that is to be dreaded in abdominal wounds. Furthermore, the danger of death from hæmorrhage is not an imminent one, as, owing to the nature of the contents of the cranial cavity, and also to the unyielding character of its walls, hæmorrhage is held within the fatal limit by the resistance of skull. There is, however, a danger, which is peculiar to the cranial cavity; namely, that the increasing pressure of the hæmorrhage taking place within the unyielding walls of the skull, may increase the shock, cause death or degeneration of nerve substances, with the resulting impairment of mental condition. Under these circumstances it may be said that a delay of a few hours is not of as great injury in cases of injury to the skull as of injuries to the abdominal cavities; but that treatment should be undertaken without unusual loss of time, yet its urgency is not as paramount as in cases of the abdominal injuries.

On referring to the table it will be seen that of 51 cases, 15 deaths occurred from shock; while in 19 cases death followed some suppurative process; and in eight there was death from hæmorrhage. Death from hæmorrhage can be prevented, if the diagnosis is certain, and time is given, by ligature of the carotid or of the meningeal arteries in a small number of cases. In the majority of cases, however, this operative treatment will be of little avail. It is, however, fair to suppose, that in the suppurative cases, a certain number can be saved by thorough aseptic and antiseptic irrigation, and careful surgical treatment in the way of promotion of asepsis and of drainage.

The following generalization seems justified:

It should be considered as a surgical rule, where the patient was not moribund, that the scalp should be dissected up, the wound thoroughly exposed; as a rule, the trephine should be applied. This will provide for thorough examination, and for drainage, as well as for a thorough exploration of the injury of the inside of the cranial cavity, and for the removal of splinters.

The treatment of the dura will require the exercise of some judgment. The wound of the dura is usually smaller than the calibre of the bullet. This wound occasionally becomes clogged with clotted blood, and the proper egress of fluid is not granted. There may be an accumulation of blood behind it and of clot, which will prevent proper drainage, and cause abnormal pressure upon the cerebral substance. If this is the case, or if there is probability of this being the case, the wound in the dura should be enlarged to allow the escape of clot.

The use of the probe without a free dissection of the scalp is not likely to give much information of value. The introduction of a Nelaton probe carefully, after trephining into the pistol-shot wound of the cerebellar substance, is not attended with danger; a soft catheter can also be employed. Irrigation, by a gentle current of aseptic fluid, is also non-injurious, and may be of advantage in cleansing a cavity. The introduction of a large instrument or of the fingers will depend upon the size of the wound. The danger of such introduction, if done with skill, is not great; but the possibility of successfully removing the bullet hid in the cerebral substance is slight. It is desirable to localize the bullet as far as possible, but the means for doing so successfully are as yet imperfect.

Where the bullet can be traced directly to the opposite side of the skull, the counter-trephining should be done at that point; not necessarily with the expectation of finding the missile, since the angle of rebound is very variable and cannot be calculated, but in order to give better drainage, and to determine the presence of a fracture on the opposite side of the skull. The introduction of drainage-tubes into disorganized cerebral substance is perfectly justifiable, and has been used to advantage; in fact, there are cases where tubes have been passed completely through with excellent results.

In short, it may be said that the treatment of pistol-shot wounds of the skull should be conducted on the same principles as the treatment of perforating fractures of the skull by a sharp instrument. That is, the wound should be thoroughly explored and thoroughly cleaned; all loose fragments should be removed, including the bullet, if readily accessible. Drainage and strict asepsis are essential.

Clinical Department.

GYNECOLOGICAL CASES AT THE ST. ELIZABETH'S HOSPITAL.

SERVICE OF F. W. JOHNSON, M.D.

REPORTED BY DR. E. H. ROSS, *House-Officer.*

(Continued from No. 15, page 373.)

ELEVEN ALEXANDER-ADAMS OPERATIONS.

Case I. Dilatation of the cervix.

N. W., single, twenty-three years of age, entered the Out-patient Department July 15, 1890, with the following history. Pain in the left ovarian region, running down the left thigh. Backache for one year. Slight leucorrhœa. Micturition at times painful. Bearing and dragging down feeling on standing. Menstruation began at fifteen; unwell every two months; flows two weeks; confined to bed first day.

Entered the hospital September 30th. Dr. Kingman used the packing faithfully to overcome the retroflexion until December 1st, when the same treatment

was continued by Dr. Johnson. No headway being made, the patient was examined under ether, and the uterus, with the prolapsed left ovary and tube, were found firmly fastened backwards towards the left, by adhesions. Dilatation of the cervix to secure drainage, breaking up of adhesions, and fastening the uterus forward by shortening the round ligaments, was advised.

December 22d. Operation. Dr. Conant assisted. The cervix was well dilated, and an Alexander-Adams operation done.

January 29th. Discharged. Uterus in excellent position.

Case II. Straightening uterine canal.

B. C., single, forty years of age, entered the hospital November 25th. Menstruates regularly every four weeks. Flows four to five days. Pelvic pain just before and during menstruation. Frequent backache. Unable to work.

December 5th. Examination under ether showed cervix and body of uterus undeveloped; anteflexion of body and neck, with retroversion. Advised straightening the canal and an Alexander-Adams operation.

December 29th. Cervix and body straightened, canal dilated, and the round ligaments shortened. It was necessary to use the catheter for ten days.

January 13th. Discharged. Anteflexion overcome, and uterus in perfect position.

Case III. Emmet's operation on the cervix.

J. C., single, twenty-five years of age, entered the hospital December 2d. She complained of constant backache and sagging down. Phthisical family history. Diagnosis: Bilateral laceration of the cervix with ectropion and retroversion. Patient had been wearing a pessary for about a year, and although it corrected the retroversion and relieved the backache and sagging down, she was anxious to get rid of it, and asked for an Alexander operation.

December 5th. Operation on the cervix and shortening of the round ligaments. Dr. Conant assisted. Small abscesses formed on both sides where the cut was made for the Alexander.

January 25th. Discharged. Uterus in perfect position. Operation on cervix a success.

Case IV. Uterus curetted. Emmet's operation on the cervix.

F. B., widow, twenty-eight years of age, entered the hospital December 8th. Has had two children. Last one born five years ago. First delivery was instrumental, and second was a breech presentation. Perineum was ruptured at the first confinement, and the cervix was lacerated at the second. Menstruates regularly every four weeks; flows one week; saturates fifteen to sixteen napkins; severe pain in ovarian regions and thighs during menstruation. Frequent sick headaches. Constipation, painful, and, at times, bloody defecation. Dragging in back and groins. Diagnosis: Ruptured perineum, bilateral laceration of cervix with erosion, chronic endometritis with mucopurulent discharge and retroflexion.

January 9th. The uterus having been got into proper position by packing, the cervix was operated on, the uterus which contained considerable hyperplastic tissue was thoroughly curetted, and the round ligaments were shortened.

Convalescence was without a drawback, and she was discharged February 1st. The uterus was in perfect position and the operation on the cervix was a success.

March 14th. Evidences of a return of the hyperplastic condition of the endometrium being present, she was advised to enter the hospital for a second curetting.

Case V. Uterus curetted. Emmet's operation on the cervix.

F. B., widow, thirty-four years of age, entered the hospital December 8th. Phthisical family history. Has had five children. For five years has menstruated every three weeks; flows four to seven days; saturates twelve to eighteen napkins. Severe dysmenorrhœa. Profuse leucorrhœa. Constipation. Severe backache. Pain in the rectum. Diagnosis: Bilateral laceration of the cervix, most extensive on the left, with erosion and enormous hypertrophy of both anterior and posterior lips. Retroflexion and chronic endometritis.

Packing having been successfully used for a month and a half, the cervix was operated on, the uterus, containing a small amount of hyperplastic tissue, was curetted, and the round ligaments shortened. The ligaments were found very friable, but were of good size when pulled up.

Case VI. Uterus curetted.

F. D., single, twenty-three years of ago, entered the hospital December 17th. Family history phthisical. Menstruation began at eleven; regular every four weeks; flows quite profusely four or five days. No pelvic pain, but severe headache during menstrual flow. Sagging and dragging down with burning in left ovarian region. Leucorrhœa for years, necessitating the constant use of a napkin. Diagnosis: Chronic endometritis, salpingitis on the left side, retroversion.

December 19th. Operation. Dr. Conant assisted. After thoroughly dilating the cervix for the purpose of drainage, the endometrium was curetted. Finally the round ligaments were shortened.

January 7th. Discharged. Uterus in normal position.

Reported the first of March. Entire relief of sagging and dragging down and burning feeling in left ovarian region. Scarcely any leucorrhœa.

Case VII. Cervix dilated.

T. R., single, twenty-one years of age, entered the hospital January 8th. Menstruation began at fourteen; regular every four weeks; flows five to six days; uses twelve to fourteen napkins. Confined to bed first two days of the flow on account of severe pain in the back and lower abdomen. Considerable leucorrhœa. Bowels constipated. Diagnosis: Retroversion with adhesions, chronic endometritis.

January 20th. Operation. Dr. Conant assisted. Cervical canal dilated to secure free drainage for the endometritis, and then the round ligaments were shortened.

February 10th. Discharged. Uterus in perfect position. No return of dysmenorrhœa since the operation.

Case VIII. Retroversion, with adhesions.

M. M. G., married, twenty-seven years of age, entered the hospital January 16th. Symptoms began eighteen months ago, soon after marriage. Complained of constant pain in small of back and left ovarian region. For one year, just midway between menstrual periods, has suffered from nausea and vomiting. Leucorrhœa since puberty. Menstruation began at sixteen; regular every four weeks; flows two days; uses nine napkins; severe pain in lower abdomen first two days of the flow. Never pregnant. Diagnosis: Chronic

endometritis, uterus retroverted and fastened by adhesions involving left ovary and tube.

January 21st. Operation. After thoroughly dilating the cervical canal to secure free drainage the adhesions were broken up, and the uterus secured in its proper place, forwards, by shortening the round ligaments. Dr. Conant assisted. Packing was firmly placed in the vagina after the operation and allowed to remain four days.

February 21st. Discharged. Uterus in excellent position.

Case IX. Retroversion, with anteflexion of cervix and body.

E. L., single, twenty-six years of age, entered the hospital January 19th. Phthisical family history. Has had several attacks of melancholia with delusions during the past few years. During one attack was sent away, but returned in a few months apparently perfectly well. Complained of sagging and dragging down in lower abdomen. Frequent headaches. Menstruation began at fourteen; regular every four weeks; flows three days; soaks six to seven napkins; sometimes severe pain during the first day of the flow. Diagnosis: Cervix small and conical, anteflexion of neck and body with retroversion.

January 28th. Operation. Cervical canal dilated and the round ligament shortened. Dr. Conant assisted.

February 26th. Patient thinks devils come out of her mouth when she speaks. Thinks the other patients are laughing at and talking about her.

March 16th. Discharged. Uterus found in excellent position by Drs. Johnson and Conant.

Case X. Retroversion, with adhesions. Both ovaries prolapsed.

A. C., single, twenty-five years of age, entered the hospital January 23d. She was sent in from the Outpatient Department by Dr. Conant. Phthisical family history. Had pneumonia ten years ago. Dates her pelvic troubles from a severe attack of dysentery which occurred five years ago. Not been able to work since that time. Complained of pain in left ovarian region and dragging in the back. Menstruation began at fourteen; unwell every six to seven weeks; flows four to eight days; flows but little. Confined to bed for three days on account of dysmenorrhœa. Constant leucorrhœa. Bowels constipated. At times painful micturition.

January 24th. Examined under ether by Drs. Johnson, Kingman, and Conant. Diagnosis: conical cervix, retroversion with adhesions, prolapse of both ovaries. Advised dilatation of cervical canal, breaking up of adhesions, and shortening the round ligaments.

February 14th. Operation, as advised January 24th. Dr. Conant assisted. On the left side the ligament was adherent, and it was necessary to open up the canal as far as the internal ring. The peritoneal cavity was opened, but was quickly closed with small catgut sutures. Convalescence was uninterrupted. Her stay in the hospital was prolonged by a non-inflammatory swelling of the left knee, leg and ankle, which appeared as soon as she began to get about. At first, pain was complained of in knee and ankle, but this soon subsided and left only the swelling. There was gradual improvement under the use of Fowler's solution, iodide of potassium, and cod liver oil. Uterus was well forward, but was drawn a little to the right of the median line.

Case XI. Emmet's operation on the cervix.

K. C., married, twenty-six years of age, entered the hospital February 15th. Has had four children. First labor was instrumental. Five months ago had cervix and perineum operated on, but both operations were a failure. Menstruation began at seventeen; regular every four weeks; flows three days; uses three to four napkins; severe pain in lower abdomen during the first day of the flow. Has constant pain in the right groin with dragging and sagging down.

February 10th. Operation. Dr. Twombly, assisted by Dr. Breck, operated on the cervix; then Dr. Johnson, assisted by Dr. Twombly, shortened the round ligaments. Both operations were a perfect success, especially the one on the cervix. She was discharged, all symptoms having been relieved.

(To be continued.)

Medical Progress.

RECENT PROGRESS IN SURGERY.

BY H. L. BURRELL, M.D., AND H. W. CUSHING, M.D.

(Concluded from No. 15, page 377.)

SOME OF THE DANGERS OF IMMEDIATE SUTURING IN CERTAIN CASES OF FRACTURE OF THE PATELLA.

After an experience of 13 cases of fracture of the patella treated by immediate suturing, Fowler has somewhat modified his views regarding the treatment of this injury.[12]

"In a number of cases he observed persistent and widespread suppuration which occurred primarily outside the joint. He explains this by the fact that in certain cases the upper recess of the joint cavity is ruptured. As a result there necessarily occurs an extravasation of the fluids effused on receipt of the injury and immediately afterward into the space between the vastus internus and the bone. The opening of the knee-joint in such cases is almost certain to produce suppuration, since it is impossible to reach this effusion by antiseptic lotions. Application of pressure would tend to further extension of the infection by forcing the effused fluids through the rent in the upper recess of the synovial sac, instead of permitting them to escape through the drainage-tubes placed in the joint.

"This view was confirmed by the observations of Riedel, who, through a death on the table during an attempt to suture a fractured patella as a primary operation, was enabled to make an immediate examination of the parts. This showed that there were two points of perforation of the upper recess of the joint, and that there was an extensive hæmorrhage between the vastus medius and the bone.

"Rupture of the upper recess of the knee-joint need not necessarily be attended by appreciable swelling of the thigh, nor are there any pathognomonic signs which would denote that this injury had taken place. If a very severe injury inflicted on the knee is followed by very slight distension of the joint-capsule, or if such swelling has taken place but has suddenly and causelessly disappeared, a suspicion as to the nature of the injury may be entertained.

[12] Brooklyn Medical Journal, vol. v, No. 3. American Journal of the Medical Sciences, vol. ci, No. 6, June, 1891, p. 625.

"If, on applying a tight bandage to the swollen knee, pain and distension are increased, this might be considered as a proof that the joint-cavity was still intact, and when this condition is present Fowler believes that the primary operation of suture may be resorted to without delay and with almost positive safety, except when in addition to the break in the patella there are extensive and severe contusions in the neighborhood of the joint. If a case is thus complicated the lessened vitality of the part renders its resistance to infection so slight as to constitute a very positive contra-indication to exposing the tissues to infection.

"Even though the operation is not advisable immediately after the injury, the surgeon need not reject entirely the idea of operation. After one or two weeks, when the inflammatory exudate has been absorbed, and the injured tissues have regained their vitality, the knife may be used with safety."

THE PATHOGENESIS OF POPLITEAL CYSTS.

Poirier, after post-mortem observations of over a thousand knee-joints, and after clinical observations on upward of a hundred patients suffering from cysts about the knee,[14] states that popliteal cysts, even those which occupy the portion of the bursa, are nearly always of articular origin. Of a hundred cases subjected to most rigid examination, not one was found which had not a distinct articular origin. The commonest and best-recognized popliteal cyst is that which is found external to the tendon of the semimembranous in the popliteal flexure. It is very prominent when the leg is extended, but seems to disappear on flexion. It evidently involves the bursa placed between the tendon of this muscle and the internal condyle. This bursa is, however, in closer relation to the cavity of the joint than any of the other bursa, and often communicates with it directly. Another form of cyst, not so frequently recognized, is that due to the outgrowth of the synovia of the joint. It involves the bursa beneath the popliteus, and appears as a deep-seated swelling in the upper portion of the calf.

A third variety of popliteal cysts is that which appears in the upper portion of the condyloid region. The bursa placed above the internal condyle is usually a prolongation of the synovia of the joint. Finally, cysts may appear in any part of the joint presenting the features of ganglion but really due to the development of subsynovial cysts or to synovial hernia.

RESECTION OF THE SACRUM IN INTRA-PELVIC OPERATIONS.

This is becoming an interesting subject, and A. Broca[15] has contributed an interesting article upon the preliminary resection of the sacrum. These operations are of two kinds: in one the resection is final, the bone being removed; in the other, the resection is temporary, and the bone is restored after the operation. In the first operation, that of Kraske, a longitudinal incision is made in the median line from the middle of the sacrum to the anus. The tissues are divided to the bone. The gluteal muscle and the sacro-sciatic ligaments are divided; and then with the chisel and mallet the lower left half of the sacrum is removed as far up as the third sacral foramen. The canal is not opened if the division of the bone is made somewhat to the left of the median line. This, however, is not a matter of much importance.

The temporary resection, with an osteo-cutaneous flap, was proposed by Heinecke, for cancer of the rectum, and has been performed by Hégar for a gynecological operation. A Y-shaped incision is made over the sacrum, commencing an inch and a quarter below and within the posterior inferior spine of the ilium, and ending at the tip of the coccyx. The upper flap is left adherent to the posterior surface of the sacrum. The muscles and ligaments are separated from the bone, and the rectum is removed from the anterior surface. Then the sacrum is divided with a chain-saw along an oblique line, the right extremity of which is between the third and fourth sacral foramina, the left extremity at the sacral cornu. When the bone has been divided the flap with the skin is raised and replaced at the end of the operation.

MM. Lévy and Delbet have modified the form of the operation by making the bone-flap from the lower part of the sacrum cut transversely across. This has the advantage of preserving the insertions and the strength of the pelvic floor.

By resection of the sacrum free access is obtained to the pelvic contents. The operation is indicated in cancer of the rectum, for hysterectomy, and for some cases of pelvic abscess; especially those which are separated from the general peritoneal cavity, and are not accessible for extirpation.

The operative treatment of rectal cancer, with especial reference to Kraske's sacral method, has been elaborately placed before the profession, with especial reference to all the operative detail and technique, by Paul Thorndike.[16]

THE PRESENT LIMITATIONS OF SPINAL SURGERY.

Abbe has contributed a valuable paper[17] on the subject of spinal surgery. He believes that the Morton injection for spina bifida should be no longer employed, but that the sac of this tumor should be excised by the method of Mayo Robson.

In spinal caries the operation should be undertaken when sinus drainage is exhausting the patient. Then the curetting may extend even to the bodies of the vertebræ. Tubercular sinuses should be cleansed with peroxide of hydrogen and iodoform injections. Cold abscesses should be treated at first by Brun's method.

In paraplegia from fracture, operation should not be undertaken until the hæmorrhage has been absorbed and the bones have united. A subjective sense of tingling and pain in the paralyzed and anesthetized limbs is an indication rather of irritation of a divided cord by the cicatrix or by bone spicula than of conduction along the cord. Observation of absence of tendon reflexes is the only satisfactory proof of probable transverse lesion. Involuntary twitching and jumping is a reflex action having its nervous origin in the distal part of the divided cord. It may exist years after the injury and must not be regarded as probably indicating ultimate recovery. Operation offers little hope in total transverse section.

Pain in the hyperesthetic part may be relieved by breaking up adhesions, nothing more can be expected.

[14] Le Progrès Médical, t. xii, No. 43. American Journal of the Medical Sciences, vol. ci, No. 6, June, 1891, p. 629.
[15] Gazette Heb. de Méd. et de Chir., No. 40, t. xxvii, p. 467. Journal of American Medical Sciences, April, 1891.
[16] Boston Medical and Surgical Journal, May 7, 1891.
[17] Canadian Practitioner, vol. xvi, No. 5. American Journal of the Medical Sciences, vol. ci, No. 6, June, 1891, p. 627.

Paresis and limited anæsthesia of the lumbar-root supplies call for operation. This will probably be followed by recovery. Paraplegia and persistent acute pain warrant a diagnosis of myelitis and local meningitis. For this condition a chance for relief should be given, as White's case shows the benefit which may follow operation under such circumstances.

THE TREATMENT OF ARTERIO-VENOUS ANEURISM.

The treatment of arterio-venous aneurisms has long been peculiarly interesting and difficult. B. Farquhar Curtis, M.D.,[18] has contributed an extremely valuable article, and relates two cases which were treated by excision of the arterio-venous aneurism. Besides this he has collated a large number of arterio-venous aneurisms which have been treated by different surgeons. He arrives at the following conclusions:

"We have seen that compression is only suitable for cases which are seen early, and in which the affected vessels lie superficially; and if it is not successful at once, or if its employment is difficult or painful, the risks of operation are not sufficiently great to warrant delay. It is my conviction that all these cases should be treated by operation, with the single exception of the cases involving the internal jugular, or requiring ligature of the common femoral artery and vein. It does not appear necessary to distinguish between aneurismal varix and varicose aneurism as to treatment. The choice of methods depends upon the size and situation of the aneurism. In a general way, it may be said that all small aneurisms not involving the larger vessels of a limb should be extirpated unless important nerves are jeopardized by the dissection, or, as on the face, it is important not to leave a scar. The treatment selected for larger aneurisms depends upon their situation. Those of the neck which involve the external jugular vein will rarely require treatment, but should it be necessary, such cases are best treated by double ligation of both vessels. In other situations the simple ligature of the vessels should not be chosen, for it will, in most cases, require as much dissection as will incision or extirpation, while not giving the same immunity from relapse. The surgeon should make an incision down upon the sac in its entire length, and attempt to dissect it from its bed. If this prove difficult or impossible because of inflammatory thickening or intimate connection with important parts, the sac should be incised, for it is often easier to secure the vessels when the sac is freely opened. The sac could then be left entirely in place, or it could be partly removed, and it may be as well to say that suture and simple drainage of the sac have been found sufficient, and that it is unnecessary to resort to packing. In closing, we must not forget that the recently-introduced suture of veins, and the successful experimental suture of arteries, may alter our methods of treatment in some of these cases; in fact, Bassini [19] has already cured a case by double ligature of the artery and suture of the opening in the vein."

A very complete literature of cases is appended.

BONE AND JOINT DISEASE, A SEQUEL OF CERTAIN SPECIFIC FEVERS, ESPECIALLY SMALL-POX.

The attention of the profession has been called from time to time to this subject by many writers, and Earnest J. Neve, M.D.,[20] has contributed a valuable article on this subject, and comes to the following conclusions:

Diagnosis. — The history and period of onset of these diseases is characteristic. A bone or joint lesion occurring in an infant or young child three or four weeks after small-pox and running a subacute course with suppuration, leaves little doubt as to its nature. The patients are usually profoundly pock-marked with recent scars. Cases seen for the first time as late as two or three months after small-pox show from the advanced state of their lesions that the condition must have arisen soon after, if not during, convalescence.

Treatment. — In many cases the treatment required is extremely simple. Incision and drainage of subperiosteal collections is sufficient. Sequestra become separated with great rapidity [in spite of the otherwise subacute course of these diseases] and can be readily removed. In the joints simple incision and drainage are sometimes productive of good results, but they are more frequently followed by prolonged suppuration and final ankylosis. So the choice really lies between modified excision and arthrectomy. I think that the joint should be freely laid open and the synovial membrane removed as far as possible. The amount of articular cartilage removed must depend upon the extent of the disease. But generally the surgeon should aim at removing sufficient to diminish the risks of ankylosis and yet avoid interference with epiphyseal growth.

Owing to the age of the patients recovery is usually rapid. Indeed, even if left untreated, there is a strong tendency to natural cure, whether by spontaneous extrusion of sequestra or by suppuration and ankylosis of joints.

(*a*) Periostitis, epiphysitis, necrosis, and arthritis may occur after and on account of exanthematous fevers, especially small-pox.

(*b*) They usually, but not invariably, appear during late convalescence.

(*c*) In typhoid fever the most frequent of these sequels is periostitis. And this attacks long bones by preference, especially the tibia, but seldom results in necrosis. Arthritis, if it ever occurs, must be extremely rare.

(*d*) Alveolar necrosis is of not infrequent occurrence. It is a commoner sequel of scarlatina and measles than of the other exanthemata.

(*e*) After small-pox: (1) Arthritis, the most characteristic lesion, occurs with greatest frequency in the elbow, and less often in the knee, shoulder, hip, and wrist. Sometimes it is primary. Occasionally it is secondary to epiphysitis. (2) Next in frequency is partial or entire necrosis of long bones, especially the ulna. (3) Suppurative epiphysitis with or without necrosis is not uncommon. The acromion is frequently attacked, as are also the long bones. (4) These post-variolous diseases occur chiefly, if not entirely, in infants and young children, and are often multiple. They are subacute and a fatal termination is rare.

(*f*) The various conditions enumerated above have a tendency to spontaneous recovery by suppuration, extrusion of sequestra, and ankylosis of joints.

(*g*) As treatment, incision and drainage are, with removal of sequestra, usually sufficient. But in cases of arthritis, prolonged suppuration and ankylosis may

[18] American Journal of the Medical Sciences, vol. ci, No. 2, February, 1891.

[19] Riforma med., April 15, 1890, p. 16.

[20] American Journal of Medical Sciences, May, 1891, p. 460.

be avoided by arthrectomy or partial resection of the joint.

LOCATION OF FOREIGN BODIES BY ELECTRO-MAGNETISM.

Kummer located a sewing-needle imbedded in the right knee by means of a magnet.[21]

"A needle was driven into the knee by a blow. Eight days later the movements of the joints were painful, and synovitis developed. It was impossible by palpation to locate the foreign body. The knee was placed upon an electro-magnet charged with a current of about ten ampères; on carrying a galvanometer over the surface after removal of the magnet, a deviation was evident. By repeated searching with the galvanometer the position of the foreign body was accurately determined and the direction of its long axis also became apparent. The surface was marked with nitrate of silver and the following day the operation was performed. Incision was carried down to the capsule of the joint without finding the needle. On placing a galvanometer needle in the wound, such an action was manifest that the operator felt no hesitation in opening the joint. A considerable quantity of sanguinolent synovia escaped, and the needle was found in the upper angle of the incision, lying between the synovia and the fibrous capsule, and corresponding closely in position with that marked on the surface by the aid of the galvanometer."

Kocher had a patient in whom, after anomalous nervous symptoms, lasting many months, a needle was discovered by means of the galvanometer; and Dumont records a case in which a primary operation was unsuccessful in removing the foreign body; but a second operation, aided by the galvanometer, enabled the operator to reach the seat of trouble. In addition several cases are cited by Graeser, Lauenstein, and Kalin.

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THE HOLY COAT AT TREVES. — Among the miracles announced as resulting from the exhibition of the Holy Coat at Treves are the curing of the withered arm of an abbé, the restoring of the sight of blind persons, and the curing of cripples. Each case is declared to be supported by medical testimony, but the details will not be published until the exhibition of the relic is finished.

[21] Revue Méd. de la suisse Romande, No. 10, 1890; American Journal of the Medical Sciences, vol. ci, No. 6, June, 1891, p. 628.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

THE SIXTH ANNUAL MEETING, HELD IN WASHINGTON, SEPT. 22–25, 1891.

(Continued from No. 15, page 384.)

WEDNESDAY. — SECOND DAY.

THE REMOTE RESULTS OF THE REMOVAL OF THE OVARIES AND TUBES.

DR. WILLIAM T. LUSK, Referee, of New York, opened the discussion on this subject:

It must be admitted, in fairness, that the removal of diseased ovaries and tubes is followed in many cases by the relief of local pain; that the removal of pus collections, whether in the tubes or ovarics, eliminates a source of danger to life; that when properly performed the dangers of the operation, *quoad vitam*, are small, not to be weighed for a moment against the terrors of chronic invalidism.

What is the usual later history of cases of double oöphorectomy, where the operation has been skilfully performed, and the recovery from the same has been speedy and complete? The central event is the cessation of the menses. By calling this the central event I mean to indicate that the woman has lost, in the disappearance of the menses, the most distinctive sign of sexual activity. At the same time, the uterus diminishes in size, the vagina becomes narrow and shrunken and its transverse ridges are effaced. In many instances the vaso-motor disturbances, such as the hot flashes, and profuse perspirations serve as efficient reminders that the climacteric due at fifty has been reached, let us say, at twenty-six.

The result of removal of healthy organs for a variety of nervous derangements, as was to have been expected, has proved a failure. In a few instances, contrary to my better judgment, I have operated in accordance with this indication, but I have never seen the slightest benefit accrue. The same wearisome experience has fallen to the lot of many of my colleagues. I am therefore tempted to assert that the performance of normal ovariotomy for epilepsy and insanity is to be regarded as hardly better than malpractice.

The extent and frequency of serious mental changes as a consequence of the removal of the uterine appendages is a question which calls for very careful investigation. One of my patients operated upon five years ago is now insane. I know nothing of her family history, but can state that she was not "queer" at the time of the operation. The recovery from the latter was uncomplicated and she left the hospital "cured." There is no trace now of pelvic trouble, but the pains have returned, and she now sits all day brooding upon the change that has taken place as regards her physical state. The reports of operations as to the connection of castration with mental changes differ widely. Some deny any connection between the two events, while Glaevecke noted melancholia in eleven out of thirty-three patients. In the table furnished by Dr. C. C. Lee, which was compiled from carefully-kept records, it is seen that depression is noted in nine cases out of twenty-six. In one instance, at the end of a year, and in three at the end of two years, the patients recovered their wonted spirits. Two of the unimproved patients were epileptic. Dr. Lee's report does not tell a very encouraging story.

A review of the results of Mr. Tait's operation shows that as a rule the change of life is effected without unusual disturbances, without loss of womanly graces, and that the sexual appetite in many cases persists. On the other hand, in certain cases, fistulæ, herniæ, adhesions, local inflammations, and a variety of physical changes complicate the issue. In some instances the relief is immediate, in many it is long delayed; in a few it never comes at all.

The more the question is studied, the more clear it becomes that the loss of her ovaries does make a difference to a woman. It is time to echo in this country Doléris's cry in France: "Too many useless mutilations; not enough conservative gynecology."

There will always be a field for the beneficial employment of Mr. Tait's operation, but its author never intended it as a panacea for every feminine ailment.

At the risk of having the finger of scorn pointed at me, I do not hesitate to confess that in cases of enlarged and tender tubes I resort to rest, the vaginal tampon, douches, massage, faradism and a tonic regimen. If the tubal swelling is intermittent, and is associated with a narrow cervical canal, I am not afraid to use Goodell's dilator to secure free drainage of the uterine cavity. If the damming up of secretions in the tubes is the result of adhesions, I try to break them up by combined manipulations, according to Schultz's method, provided the tube-sacs do not contain pus. If I am in doubt, as regards this point, I employ an exploring needle passed upward through the vagina. I am in accord with Landau, Munde, Grandid and others, who maintain that one can often effect a cure by the withdrawal of the fluid through the vagina, and in a pyosalpinx which is near the vagina, I do not hesitate to open and drain from below. If, owing to the presence of a pus-tube, or of well defined ovarian disease, or where owing to uncertainty of diagnosis or failure of treatment, it is decided to open the abdomen, it will be well in future to consider the recommendations of Martin and of Polk, not in all cases to remove the entire organs, but to study in each case with care, whether by removing simply the portion affected with disease it may not be possible at the same time to relieve pain, and preserve the feminine function.

It cannot be too often repeated that the successful removal of an organ is not a triumph of art, but a confession of defeat.

Dr. Wharton Sinkler, Co-referee, of Philadelphia, spoke as follows:

In considering the results of the removal of the uterine appendages, two questions are to be considered: first, if the removal of the ovaries was resorted to for disease of these organs; and, secondly, if the operation was done for disorders of the nervous system which were aggravated at the menstrual period, and which it was hoped could be cured by causing cessation of menstruation.

I have known many most satisfactory results to follow the removal of the ovaries and tubes for pyosalpingitis, ovaritis, and other inflammatory conditions of these organs: and the general testimony is, that it is in these conditions that the operation is followed by the best permanent results.

The physiological effects appear to be the same, whether the organs removed have been diseased or healthy. The age at which the operation was done has some bearing on the symptoms which follow. Young subjects present more marked phenomena than older persons. When the uterine appendages have been removed before puberty, or near the beginning of the menstrual function, the development of sexual characteristics is arrested. If, however, these organs are removed after full womanhood, no change takes place in the peculiar feminine characteristics. These are universally admitted facts. The phenomena which follow the removal of the ovaries, as Tait expresses it, "match in all other respects the process of the climacteric change." This is about the gist of the matter, We find in almost all cases as soon as the patient has recovered surgically, that the various symptoms belonging to the change of life are present. The most prominent of these are the flushings and sweatings so commonly seen at the menopause. These occur most frequently during the first few months after the operation, sometimes annoying the patient intensely. These symptoms reach a climax in from three to six months, gradually disappearing in a year, or a year and a half.

Disturbances of the heart's action are common, and rapid pulse (tachycardia) is a not infrequent symptom.

There is a wide-spread impression that women upon whom this operation has been done gain in flesh rapidly, and become coarse and masculine in appearance. This is entirely erroneous. It has never been my experience to see, or hear of, a woman who has become unfeminine in the contour of the bust or limbs in consequence of removal of the ovaries.

The growth of hair on the lip and chin does not occur any more frequently than it does in women whose ovaries have never been tampered with.

Patients often suffer from various nervous troubles after removal of the uterine appendages; they are often restless and irritable, or depressed mentally. In some cases there is merely mental depression or mild melancholia; in others, there is either acute mania immediately following the operation, or a mild form of insanity gradually deepens and becomes a chronic mania. It is only fair to call attention to the fact that acute mania may follow other surgical operations. The number of cases following oöphorectomy is large. Dr. T. Gaillard Thomas has reported six cases of mental disturbance following gynecological operations. Mairet has collected twenty-five cases of insanity following operations from his personal experience. Dr. William Goodell states that two of his patients became insane a few months after the operation. Dr. Graeme M. Hammond reports a case of acute insanity following ovariotomy in four or five days. Dr. E. E. Montgomery records two cases, out of twenty-five to thirty, who became insane after the operation. I have under my own observation several cases of insanity after removal of the ovaries.

The consensus of opinion respecting the sexual appetite after castration in women, is that it is but little affected. The effects of the removal of the ovaries upon sexual appetite proves what has long been believed to be the case; namely, that the sexual desire does not depend upon the ovaries but upon the centres in the spinal cord. I have seen two cases in which onanism persisted after the operation the same as before.

As to the benefit derived by patients who have undergone oöphorectomy for insanity, epilepsy, hysteria, and the different forms of neuralgia and nerve troubles, there are a large number of cases who do make a good recovery after the removal of the offending organs. In cases of extreme dysmenorrhœa this is con-

spicuously true. On the other hand, a vast number of patients, who are temporarily relieved by the operation, in a few months are in as bad a condition as ever.

Dr. S. Weir Mitchell had seen many cases of ovariotomy where the ovaries ought never to have been touched. Judging from his experience of the past, he feared that among the most reckless operators will be the women operators of the future. He thought that greater thoughtfulness and more general medical conscience was needed in this matter. Every new medicine and every new operation is apt to induce excesses either in medicine or surgery. After a while these cure themselves, often after heavy cost. As an example of this, the introduction of the bromides was recalled. These ovarian cases have not gone on long enough to give really remote histories. We want to know what becomes of women, operated on at eighteen to twenty, ten or fifteen years afterwards. The histories of such cases as thigh amputations ten or fifteen years later, show remarkable changes in the nervous systems of the patients. In a long professional experience, he had only in fifteen cases been forced to call upon the surgeon for removal of the ovaries. The practical abolition of the death penalty in surgery has produced an amount of temptation in the surgical mind which is responsible for a good deal of the mischief under consideration, and has made men too ready to operate without medical consultations. This operation should never be done by a surgeon without consultation with a physician. Dr. Mitchell related four cases, all young married women, and all from California, who had been condemned at home to lose their ovaries. In one case Dr. Goodell believed that no other cure was possible. Under Dr. Mitchell's care they were all cured. All are happy women to-day, and it is three years since the last one was cured. All have had children since, and are able to do everything that a woman should do. Had their ovaries been removed they would have doubtless gotten well, and have had reasonably happy lives; he preferred to get them well without crippling them in any way.

Dr. James J. Putnam reported that he had sent a circular to most of the gynecologists and surgeons in Boston, in order to report their experience and opinions in so far as they had not hitherto been published. The great majority of them had answered that they had not used oöphorectomy in the treatment of nervous symptoms. Twenty-four hitherto unpublished cases had, however, been given by Drs. F. W. Johnson (11), John Homans (8), J. W. Elliot (5).

Eight of these had apparently been benefited by the operation, the good result not appearing sometimes for a number of months. In one case the patient did not improve for three years, and for that reason this case was not included among those reported as benefited. The remaining cases had not been benefited. In several cases maniacal symptoms had followed the operation, but these symptoms had only been of temporary duration, except in two or three cases where it was subsequently found there had been previous indications of insanity. Dr. A. T. Cabot was also referred to as having had two cases of ovariotomy in which serious mental disorder had followed, which in one case lasted for many months.

In summing up and stating his own opinion, which he believed to be also that of the surgeons quoted, Dr. Putnam said that the recent advances in our knowledge of neurasthenia and its treatment, had made most of the neurologists distrustful of those modes of treatment which were not based upon a recognition of the fact that serious nervous symptoms are rarely due to local irritations alone. The physician is bound, therefore, to leave no stone unturned before resorting to a measure which the patient may afterwards deeply regret. It is also true that if we determine not to resort to such measures except in the last extremity, we shall often find it possible to get on without them. At the same time, while the physician should conscientiously weigh the objections to the operation, he is equally bound not to forget that it has, in many individual cases, proved of priceless benefit.

Each case should be judged on its own merits, and a physician should take care that his own temperament and bias do not stand in the way of the patient's welfare.

Dr. W. T. Gairdner, of Glasgow, thought that in Scotland there was not the same reckless surgery which had been alluded to, although the necessity for caution doubtless exists. He could heartily endorse almost everything in Dr. Lusk's paper. He related a case which came under his notice many years ago, of a young lady who suffered positive agony at every menstrual period, and had this occurred in recent years the question of removal of the ovaries would undoubtedly have been raised. She married, and afterwards had only one of these terrible attacks. She became pregnant, and from that time her whole life has been entirely free from any of the former trouble. She has borne nine children, and is an excellent mother. A case of this kind, before the mind of everybody who is placed in contact with the question of excising the ovaries of an unmarried woman, will be of service.

Dr. C. C. Lee said that for the past ten years he has kept careful records of the cases which he had operated upon for removal of ovaries, either for local disease or diseases of the nervous system. He had yet to see a single case of benefit after a lapse of five years where the removal of the appendages was done for neurotic conditions, and he knew of no case that was not benefited where there was distinctly ascertained structural disease of the appendages. The removal of the uterine appendages is not only legitimate, but is a necessity in all cases where a permanent structural lesion has been made out, and these lesions he thinks can be accurately diagnosed. When this operation is done within proper limitations, it is one of the most beneficient of modern surgical resources.

Dr. Wathen thought the Association deserved thanks for having brought this subject before the profession of this country; the utterances made by its members will tend to control the excesses that have been committed in abdominal and pelvic surgery. He could not conceive of any instance in which ovaries and tubes, considered in a physical examination as normal, should be removed, no matter what the neurotic condition of the patient. He strongly urged the practice of conservative surgery of the pelvis.

Dr. Lusk said that his position at present was this: That there are a certain number of cases that he did not know how to treat any better than by taking out the ovaries and tubes. But there are so many cases that he now cures without operation, which five years ago he would have considered it impossible so to cure, that he is in hopes that as time goes on he will still

further reduce the number of cases in which operation is called for. It is necessary that we should spread abroad the idea that the performance of a laparotomy and the removal of ovaries and tubes is not a stupendous form of surgery. He and Dr. Lee were general practitioners, but the cases upon whom they had operated have produced as good results as have been achieved by the most distinguished of the pelvic surgeons.

NERVE-STRETCHING IN INVETERATE TRIGEMINAL NEURALGIA,

by Dr. James Stewart.

Dr. Stewart confined himself entirely to the consideration of those inveterate cases of trigeminal neuralgia, which are usually described under the name of epileptiform neuralgia. This term includes not only those cases attended by spasm of the facial muscles, but also that class of cases where the neuralgic paroxysm comes on with great suddenness and lasts a few seconds, and which persists for years in spite of all the ordinarily employed external and internal remedies. Of three cases which came under his observation, one was a woman, aged fifty, whom he first saw in November, 1889, who complained of severe neuralgic pains in the left infra-orbital region. The first paroxysm came on twelve years previously, and was attended by profuse flow of saliva. For a period of about two years she had no recurrence of the attacks, but during the past ten years she had many attacks daily during the winter months of these years. She was entirely free during the summer months. She had been perseveringly treated by many different physicians, but with very little relief. Dr. Stewart advised stretching the nerve, and Dr. Shepherd of Montreal performed the operation in December, 1889. She remained entirely free from pain for thirteen months after the operation. In January, 1891, the pain returned in the same spot, with much of its old-time severity, but only lasted a few weeks. For the past six months she has remained entirely free. A second case was a woman, aged sixty-five, who was never affected with neuralgia until after her sixty-first year. For a period of four years she had been troubled with severe darting pains in the region of the right infra-orbital nerve, and for several months before the operation the paroxysms had assumed an extremely severe form. For hours, and even for a day or two at a time, she was not infrequently compelled to remain perfectly quiet in the endeavor to lessen the number of attacks. Dr. Shepherd stretched the right infra-orbital nerve in February, 1890, and with the exception of one severe paroxysm a few hours after the operation, the patient remained entirely free from pain for a period of fourteen months. After this she had on several occasions slight recurring attacks at considerable intervals, but the intensity of the pain never reached what it did in the period previous to the operation. This patient died in August of the present year, from enteritis.

The third patient was a woman eighty years of age. Fifteen years ago she received a severe injury to the right shoulder, involving the brachial plexus; she dates her facial neuralgia from this period. All the teeth in the right upper jaw had been removed, but with little or no beneficial result. Dr. Buller, on January 12th of the present year, stretched the infra-orbital very forcibly, but without any solution of its continuity, as far as could be judged. All pain ceased from the date of the operation. There was complete loss of sensation and reflexes on the right side of the tonsil, uvula, and soft palate. Four months after the operation there was a return of the old neuralgic pain. Six months after the operation the paroxysms of pain were less frequent and less severe and she spoke of them as being quite bearable then in comparison to what she formerly suffered.

In the three cases reported there was complete relief, lasting in one for fourteen months, in another about twelve months, and the third for four months. These results, although not of a very enduring character, still are sufficiently pronounced to much more than counterbalance the slight danger and distress attending the operation performed.

Dr. Stewart, in looking up the literature of this subject, found but few cases where the patient was kept under observation for a period of nine months after the operation. He believes that the percentage where permanent relief is obtained is very small, probably not more than five per cent.

From study of cases of neurectomy, some 250 cases in all, Dr. Stewart believes that fully twenty per cent. have relief extending from one to three years, and probably ten per cent. are completely cured. The showing from neurectomy is considerably better than from nerve-stretching, but it must be remembered that neurectomy is an operation not devoid of danger. Nerve-stretching is a mild operation and should always be preferred to an extensive neurectomy.

Dr. Stewart has come to the following conclusions: (1) Nerve-stretching gives either complete or great relief in the majority of cases. (2) Relief is not permanent in more than five per cent. of cases. (3) If the pain should return, the operation should be repeated even several times before resorting to a neurectomy or ligature of the common carotid. (4) If the pain is not strictly and always limited to one branch of the nerve, several branches should be stretched. (5) As relief does not always immediately follow the stretching, a second operation should not be undertaken until some time has elapsed.

ON THE DISEASES OF THE KIDNEY POPULARLY CALLED BRIGHT'S DISEASE,

by Dr. Francis Delafield.

The time has come to abandon the idea that there is such a disease as Bright's disease, and to cease from the attempt to describe varieties of a disease that does not exist. In classifying kidney diseases, we may do so according to their causation, according to the character of the morbid process, or according to the portion of the kidney involved. At the present time a working classification is made most easily according to the character of the morbid process. Such a classification would be as follows: Acute congestion of the kidney; chronic congestion of the kidney; acute degeneration of the kidney; chronic degeneration of the kidney; acute exudative nephritis; acute productive, or diffuse nephritis; chronic productive, or diffuse nephritis, with exudation; chronic productive, or diffuse nephritis, without exudation.

Congestion, whether acute or chronic, produces an accumulation of blood in the veins and capillaries of the part affected, causes local symptoms and disturbances of function, and is to be relieved by means addressed to the circulation of the blood. *Degenera-*

tion, whether acute or chronic, produces changes more or less profound in the parts affected; is regularly caused by poisons, by disturbances of circulation, and by other diseases; produces disturbances of function according to its severity; may be itself a cause of inflammation, and can be but little affected by any treatment. *Inflammation* is attended with three essential features, which may occur separately, or together; an escape of the elements of the blood from the vessels, formation of new tissue, and a death of tissue. So we speak of exudative, productive and necrotic inflammations. Exudative inflammation is of short duration, leaves behind it no permanent changes in the parts affected, and can be favorably affected by treatment. Productive inflammation runs an acute, subacute or chronic course. It affects permanent changes in the inflamed parts. Its acute forms are very apt to become chronic. There is much variety as to the relative quantity of exudation and of new tissue. Treatment is not very satisfactory.

Dr. W. T. Gairdner, of Glasgow, speaking of the term "Bright's disease," said that on the face of it, he did not like it — a disease called after a man. He did not think Bright would have wished or sanctioned the use of his name in connection with this disease. If he (Dr. Gairdner) went down to posterity at all, he hoped that it would not be either in connection with a disease or a pill or a powder. But there must have been something of practical expediency or necessity, felt as such at the time, in connecting Bright's name with this disease. Bright's own position in regard to this disease is a very remarkable one. He does not attempt to theorize about it at all. He stated facts, and carefully guarded himself at all points in the statement of these facts. What Bright said was, that there are some organic diseases of the kidney, that is, diseases attended by permanent changes of structure, which are associated with dropsy and with albumin in the urine, and that the association of these facts was an important clinical indication which should be kept in view in diagnosis. Subsequently, in Guy's Hospital Records, he developed almost all of what we now know: for example, the association of enlargement of the heart, and certain alterations in the arterial system. All this can be found foreshadowed, at least, in his work. He did not approach a generalizing theory of its pathology. He said that some of these different conditions *may* begin in inflammation; he did not say it was so. All who have accepted these doctrines and followed on Bright's lines came to see that Bright's disease was a term which could not be dispensed with at that time. Then came the book of Rayer, which at once took hold of the French school in the same way that Bright's took hold of the English school. Rayer had no difficulty about generalizing and putting forth a theory, and he tried to cover the whole field of Bright's disease under the term "nephrite." This had an unwholesome influence on the French school because, by bringing in so broadly the idea of an inflammation as the elementary pathology of Bright's disease, it led to bad practice, that is, the undue use of the so-called antiphlogistic remedies. They had the fear of inflammation of the kidney before their eyes, and in the case of a dropsy were afraid to make use of diuretics. Then came the three-fold division of Virchow: the intra-tubular or parenchymatous nephritis, the intra-tubular or interstitial form, and the amyloid. This three-fold division, with the great authority of Virchow behind it, has taken hold of the medical mind, and has led my friend and colleague, Dr. Grainger Stewart, to speak of Bright's diseases. The tendency has been too much to make these three forms absolutely distinct from each other, and to overlook what is probably the fact that there must be an underlying unity when they all lead to permanent disorganization of the kidney. Dr. Gairdner believes that the amyloid form is not, properly speaking, a form of Bright's disease, for the amyloid change is not necessarily a disorganizing change. As an illustration of this, he cited the case of a patient who had reached the last degree of exhaustion connected with amyloid disease supervening upon disease of his bones, who recovered completely after the performance of an operation. Of the two other classes (the intra-tubular and the extra-tubular) there is a fairly broad clinical distinction between the extremes, but when the subject is investigated further, I think we shall find something pathologically in common, which really forms the essential change in a case of Bright's disease.

Dr. W. T. Councilman considered Dr. Delafield's proposition to classify the kidney diseases, not according to the appearance of the kidney but according to the nature of the pathological process in the kidney, as an exceedingly great advance. Dr. Councilman, in his investigations of renal disease at the Johns Hopkins Hospital, had attacked the subject from another point of view, — from an etiological standpoint. Lesions of the kidney can be divided ifito two classes: focal lesions and diffuse lesions. He had endeavored to trace, in a general way, how these lesions took place. We might assume that the kidney, so long as it receives its blood-supply in normal amount, so long as that blood-supply is of a normal nature, so long as there is no change in the blood itself, and so long as the products of excretion of the kidney are not interfered with, the tubes remain normal in the kidney for all time. In order to have change, there must be some alteration in the character of the blood, in the amount of blood going to the kidneys, in the pressure of blood, or some interference with the removal of the excretion of the kidney. The focal lesions are produced by substances which reach the kidney in an insoluble form; these are essentially the bacterial lesions of the kidney, the tubercles, abscesses, and so on. The other great class of cases, the diffused lesions, are due to soluble substances brought to the kidney. These substances being in solution in the blood are distributed all over the kidney, and the lesions, in consequence, will be diffused. These are the lesions which come on in consequence of the infectious diseases, and in consequence of chemical substances whose nature we do not very well know, and constitute a number of the varieties of chronic diffused Bright's disease. These injurious substances can also reach the kidneys by way of the ureters. Congestion of the kidney, either acute or chronic passive congestion, produce certain degenerations in the epithelium of the kidney. And further, there are certain lesions produced in the kidney by the result of the interference in the circulation by changes in the kidney alone: and here come in the very important changes in the kidney which always accompany the amyloid process. Amyloid changes are almost essentially confined to the glomeruli, and we know that all the blood of the circulation of the kidney passes through the glomeruli first, and these being diseased we have certain degenerative lesions in the epithelium of

the kidney elsewhere directly in consequence. We can have, as a result of all these lesions, conditions which will be very similar indeed. It is possible that we can have almost the same macroscopic appearance of the kidney in a case where circulation is interfered with, as in general endarteritis, and from the long-continued action of some soluble morbific agent. In consequence of both of these processes, changes are produced in the kidneys, consisting essentially of degenerations followed by increase of connective tissue. We can have a granular contracted kidney in any of these conditions.

Dr. V. C. Vaughn thought Dr. Delafield was certainly working in the right direction. It has been very unfortunate that we have been so long hampered with the term Bright's disease. We all recognize that there are diseases different in their origin and etiology and demanding different treatment, all coming under the head of Bright's disease. The quicker we can get away from the idea of unity in these diseases the more rapid progress we shall make.

How much shall be included in the term "albumin?"

by Dr. Andrew H. Smith.

With the discussion of Bright's disease the question of the significance of albuminuria is inseparably connected. But as preliminary to determining whether we have albumin in the urine, we must decide as to what, or rather how much, shall be included in the term albumin. Some studies which I have recently made seem to show that albumin, or, to be more precise, serum albumin, is a very indefinite term, in fact that it does not represent any definite chemical substance. Thus I find that a solution of Merck's pure serum albumin in water will give when boiled a precipitate. This being filtered out and the filtrate treated with nitric acid, a second precipitate is formed. Filtering again, and adding a strong solution of mercuric bichloride, we get a third precipitate. Filtering once more, and agitating the filtrate with ether, a precipitate is formed which rises slowly to the surface. Finally, after filtering this out, agitation with chloroform throws down a dense white fifth precipitate. Here then we have five distinct precipitates formed successively from the same portion of a solution of pure serum albumin, and I have no reason to suppose that I have exhausted the possibilities in this direction. From these observations, coupled with the fact that chemists have never been able to fix upon a definite formula for albumin, no two specimens giving the same result on analysis, I think we are justified in the inference that there is no body having a definite chemical composition to which the name albumin can be affixed, but rather that albumin like the contents of a brewer's vat, is a transition substance, the exact composition of which changes by insensible gradations as the transition advances, and that any given specimen is simply a mixture of different gradations, some of which respond to one test and some to another.

Clinically, what sort of a precipitate shall be considered to decide whether a patient has or has not albuminuria? Shall it be the one obtained by heat, or the one by nitric acid, or the one by picric acid, or the one by Tanret's test, or the one by Millard's test, or the one by bichloride, or the one by ether, or the one by chloroform, or the one by some other "more delicate" test yet to be discovered? It is very important that this should be settled before we pass sentence upon a patient, particularly as at least two of the precipitates which I have obtained from serum albumin can be obtained from the urine of every person in this hall. Normal urine agitated with ether will give a more or less abundant precipitate precisely similar to that from serum albumin. Filtering this out, and agitating the filtrate with chloroform, we get a precipitate which again is precisely similar to that from serum albumin! Filtering this out, and agitating the filtrate with chloroform, we get a precipitate which again is precisely similar to that from serum albumin. The inference which I draw from this is, that under normal conditions there is an excess of nutritive material in the blood, and that a considerable share of the albuminous portion of this excess passes out through the kidneys, without having become at any time a part of the tissue. This overflow contains albuminoid material in various stages of elaboration, any stage of which may cause a response to some one test but not to others. There is no definite line of demarcation between those albuminoid substances which are normally present in the urine and those which are abnormal. The most we can say is that urine which responds to the coarser tests, such as heat and nitric acid, is more likely to be abnormal, while the more "delicate" tests may show normal as well as abnormal constituents of the urine. Certainly ether and chloroform are tests so "delicate" that if their evidence were admitted, all the world would have albuminuria.

Dr. W. T. Gairdner: With respect to the substances which Dr. Smith obtains from normal urine, he did not believe it had any pathological analogy with the albumin which is found in Bright's disease. He would never pronounce the fate of a man upon any other test than those of nitric acid and heat.

Dr. Vaughn thought that all of these so-called "delicate" tests for albumin were fallacious. It is better to overlook a case of Bright's disease that actually exists than to pronounce a man in perfect health as having Bright's disease.

Dr. J. P. C. Griffith, after examining the specimen exhibited by Dr. Smith, containing the precipitate obtained by the chloroform, thought that it was not a precipitate but an emulsion.

Dr. Smith said that he had taken the precipitate with chloroform, dried it at a temperature of 150° and obtained a solid residuum. We are constantly liable, he thought, in our "delicate" tests to confound albumin with something that is normally in the urine.

Bradycardia in acute articular rheumatism,

by Dr. I. E. Atkinson, of Baltimore.

Bradycardia, or abnormal infrequency of the pulsations of the heart, is present, according to several recent writers, whenever the heart-beats fall below sixty in a minute. It is undoubtedly a very rare symptom during the course of acute articular rheumatism, and nearly all writers upon this disorder do not refer to it. Statistics show that it is usually during convalescence from, and not in the course of rheumatic fever that bradycardia has been encountered, and that when thus occurring it usually has its origin in a cause common to convalescence from a number of acute febrile disorders. But it is not the object of the paper to discuss bradycardia as an epiphenomenon of convalescence;

the rare phenomenon of bradycardia during the course of and not after acute rheumatism is more especially considered, first in its clinical and then in its etiological relations.

Dr. Atkinson here gave in detail two cases which had come under his own observation, and one case each from Blachez, Peacock, Bouillaud and MacDonnell. In his first case pericarditis was present, and a systolic basic murmur developed and persisted. In his second case there was pericarditis with slight effusion. Pericarditis was also present in the cases of Blanchez and Bouillaud. In Peacock's case there was sharp precordial pain and a systolic basic murmur developed; and in MacDonnell's case a soft blowing systolic murmur appeared and disappeared. Blanchez thought the bradycardia in his case was intimately related with the inflammation of the serous membrane, probably to the more or less profound modification which the superficial muscular layers from the heart experience from the pericarditis present. Most writers upon diseases of the heart refer to the occasional slowing of heart action in pericarditis, though, since the phenomenon is quite rare, specific examples of such occurrence are quite uncommon. Graves has known the pulse to be less frequent than in health during the first stage of pericarditis. Ozanam notes that a rare pulse at the beginning of an acute cardiac affection ordinarily indicates the invasion of pericarditis or of endocarditis. Here the phenomenon of slowness, as contrasted with the ordinary pulse of inflammation, is accounted for by an excitation of the vagus nerve. Similar observations are made by a number of writers. There are a number of recorded observations of bradycardia developing during the period of serous effusion into the pericardial sac. Dr. D. W. Prentiss, in 1889, in a paper read before the Association, presented abstracts of ninety-one cases of slow pulse which he had found recorded in medical literature. In two of these cases the bradycardia was associated with pericardial effusion.

In view of the various factors that it is possible to imagine as provocative of bradycardia it would be unwise to deny the power of rheumatic principles circulating in the blood to slow the action of the heart, working upon the muscle itself or upon its nerves, as is assumed by Grob; and it would be equally unwise to assert that when bradycardia develops during acute rheumatism, it may not depend upon rheumatic myocarditis, with or without endo- or peri-cardial inflammation. It would seem, also, that not only may bradycardia arising during the height of the rheumatic fever but, not infrequently, that developing during the decline and even after the subsidence of this affection be attributable to conditions in which the inhibitory nerve of the heart may be involved in irritation and that therefore, Traube's theory of "heart-tire" may not answer for all, even post-rheumatic bradycardia.

The following conclusions were presented: (1) Bradycardia is observed rarely during the active stage of acute inflammatory rheumatism. It occurs with greater frequency during convalescence from this disease. (2) When it occurs during convalescence, in most cases, probably, it is identical with bradycardia following acute febrile diseases of widely different nature and directly the result of the febrile action itself upon the innervation or musculature of the heart. (3) When it occurs during the active stage of rheumatic fever, it probably depends upon endocarditis or pericarditis or myocarditis (primary or secondary, by extension) whereby the inhibitory nerves of the heart are implicated and consequently stimulated. Even where the physical signs of cardiac inflammation are absent, bradycardia occurring during the acute stage of rheumatism may be secondary to undetected myocarditis stimulating the vagus nerve. (4) It is possible, but exceedingly improbable, that this symptom may follow the action of the rheumatic *noxa* upon the cardiac muscle or nervous system directly.

Dr. Pepper related a very interesting case which he had recently seen, where, without any apparent cause, a middle-aged man became the subject of "diaphragmatic palpitation" with bradycardia. He has attacks with respiration about 110, and pulse 50; he pants like a hunting dog after a chase for hours and days, while able to go about and take food and sleep. Another peculiar case of bradycardia under his observation was that of a child with erysipelas of the face. There was a sudden recession of the erysipelas with development of acute local peritonitis in the epigastric region, with high temperature and bradycardia. Gradually the peritoneal symptoms subsided and the pulse, respiration and temperature became normal. Dr. Pepper had seen a number of cases in his practice, of acute pericarditis with bradycardia.

Dr. Ord, of London, was much interested in Dr. Atkinson's paper, because it called attention to the occurrence of slow pulse where the temperature is still raised. For many years he has thought it probable that the pneumo-gastric nerve itself plays an important part in the phenomena of acute rheumatism. We see structures, the myocardium, the peri- and endo-cardium, with which it has important relations, taking on active inflammation quite out of all proportion, in many cases, to the intensity of the joint inflammation, but having a very considerable relation with the temperature. Then there is the remarkable phenomenon of the skin perspiring profusely when the fever is running high. And there is a great tendency to hyperpyrexia. All these seem to indicate that the system of the pneumogastric exercises an important part in the phenomena of acute rheumatism.

For years he has had the idea that acute rheumatism is to be regarded as the work of nerves excited in various ways — by strain, by reflex irritation. This would most probably explain the acute rheumatism which is apt to follow parturition, and the acute rheumatism which occurs in lactation, and that following in acute quinsy.

During the past six or seven years he has been examining carefully a large number of cases of gastric ulcer in which anæmia was well marked, and has found physical signs which seem to indicate the process of pericarditis with effusion; in some cases endocarditis with affection of the mitral valve; and in some cases myocarditis. If in these cases, without fever, without prostration, there is a setting up of inflammation about the heart, how can we account for the inflammatory process coming about? It is probably through reflex irritation conveyed up and down the fibres of the pneumogastric. Of course, both the gastric ulcer and the cardiac mischief may be the result of the pneumogastric becoming irritated in an anæmic person.

Referring to Dr. Atkinson's cases, he thought the bradycardia in them would fit in with his idea of the pneumogastric exercising some function in acute rheumatism.

(To be continued.)

AMERICAN SURGICAL ASSOCIATION.

Twelfth Annual Meeting held in Washington, Sept. 22-25, 1891.

(Concluded from No. 15, page 381.)

FRIDAY.— THIRD DAY.

The committee to which was referred the suggestions in the President's address, offered the following resolution, which was adopted:

"*Resolved*, That the President appoint a committee with authority to confer with the friends and admirers of Professor S. D. Gross, and with the profession at large, for the initiation of a movement on the part of the Association, having for its object the erection of a monument to Dr. Gross, in the city of Washington."

As the matter is an important one, the President stated that he would announce the committee in a few days.

TREATMENT OF FRACTURES INVOLVING THE ELBOW-JOINT,

by Dr. Lewis A. Stimson, of New York.

The special interest of the subject arises from the frequency with which fractures of the lower end of the humerus are followed by more or less diminution of the functions of the elbow-joint, and by deformity of the region or of the limb. The paper was devoted mainly to a consideration of the causes of these unfavorable results.

Causes of Limitation of Motion.— Permanent stiffness after simple fracture is commonly due to change in the shape of the articular surfaces or in their relations to one another, that destroys the coincidence of the axis of curvature with that of motion; or to an overgrowth of bone upon the surface of the humerus, arresting the movement of the olecranon or coronoid process; or to more or less extensive ossification of the ligaments and capsule.

Overgrowth of bone from traumatism is more frequent in the young than in the adult. As limitation of motion may be caused by bony outgrowth from the humerus, itself the result of a persistent displacement of a fragment or of separation of the periosteum, the most efficient way to prevent it lies in an exact diagnosis and reduction of displacement and in the avoidance of any subsequent irritation of the periosteum.

Limitation of motion from thickening of the capsule and peri-articular tissues by the products of inflammation, is, as a rule, a temporary condition. In the more permanent form the lesions are more extensive; the soft tissues are torn and a true cicatrix results. The thickened tissue may become ossified in whole or in part. This cause of limitation has been attributed, but improperly so, to prolonged immobilization, and has led to the practice of passive motion in the early stages, with the object of preventing its occurrence. Observation and experiment has, however, shown that immobilization is not itself a cause of ankylosis, but that it is an efficient agent against inflammation, and that passive motion is powerless to prevent ankylosis when conditions contributary thereto are present. Passive motion, therefore, is either harmful or useless. The primary cause of the exudation and of the proliferation of connective tissue that are the anatomical obstacles to motion is, of course, the original traumatism; the secondary cause is the following reaction. The only factor that can be increased or diminished by treatment is the second, that is, the inflammatory reaction. Rest is universally admitted to be the best antiphlogistic measure that can be applied to an inflamed joint. An important disadvantage of rest at once suggests itself, namely, that the torn tissues may unite with shortening. Both clinical observation and theoretical considerations indicate that passive motion in the early stage does not avoid this disadvantage, but actually increases it. In the present state of our knowledge it seems that a certain amount of limitation is unavoidable. Massage, however, hastens the absorption of exudation and the restoration of mobility, as does also permanent elevation or suspension of the limb. Reunion with shortening may be opposed by change in the attitude of the limb every few days. At a later period passive motion has its value, but in the early stages it is to be avoided.

In regard to deformity, reference was made to only one, that commonly known as the "gun-stock" deformity, due to unreduced displacement of the internal or external condyle. In order to avoid this deformity, the displacement should be reduced by pressure upon the fragment or by abduction of the extended forearm until its outward deviation is equal to that of its fellow, and immobilization by dressings that will not reproduce the displacement.

Treatment.— The first element in the treatment is the reduction of the displacement; if necessary, an anæsthetic should be employed. In supra-condyloid fractures permanent traction is usually necessary to overcome the displacing action of the flexors and extensors. This can be effected by vertical suspension of the limb, the patient being kept in bed, or by a weight suspended from the upper part of the flexed forearm while the patient is erect. The former method was recommended for the first fortnight of treatment, especially in compound fractures. Suspension is made by strips of adhesive plaster placed along the front and back of the forearm, and attached to the support by india-rubber cords or a weight and pulley. In simple fractures the other method may be employed. The limb is encased in plaster-of-Paris, with the elbow at a right angle, the wrist being placed in a sling and a weight not exceeding five pounds suspended from the elbow.

In inter-condyloid fractures with marked separation, there is no practicable means of surely maintaining reduction, and considerable limitation is to be expected. In these cases a broader, heavy posterior splint, covering about two-thirds of the circumference of the limb, the elbow being at a right angle, was recommended.

In fracture of either condyle the treatment is by a posterior rectangular splint either of metal or plaster. The forearm has been supported across the chest by a sling at the wrist. In some cases treatment in full extension has been employed. After this method has been used for the first ten days or fortnight, recourse is had to the position with the elbow at a right angle.

Gentle massage will hasten convalescence. It may be advisable to change the position of the limb during treatment; and if great limitation is to be expected, that attitude should be given to the joint in which, if stiff, the usefulness of the limb will be greatest. In supra-condyloid and inter-condyloid fractures, the splint should be worn six weeks, and in fractures of the condyles for about four weeks. After removal of the splint, the arm should for a few days be supported in a sling. If necessary, passive motion may at this time be resorted to, to increase the range of motion.

DR. N. P. DANDRIDGE, of Cincinnati, agreed with what had been said by the reader of the paper, and referred to two cases occurring under his observation. In one case of simple fracture from great violence, in which non-union had occurred, the arm was treated in a position of almost complete extension. The second case was one in which, after fracture at the elbow-joint a projection of bone pressed upon the median nerve, causing severe pain and atrophy of the muscles in the distribution of the nerve. The case was seen three months after the accident. Removal of the bone was followed by relief of the pain and a gradual restoration of the function of the muscles.

DR. R. A. KINLOCH, of Charleston, thought that in simple fractures about the elbow, if seen early, and the ordinary principles in regard to the treatment of fractures be applied, the result would be good. Probably in a large number of cases we must expect some restriction of movement. The most important element in the treatment is the proper reduction of the fragments. This should be done at once, an anæsthetic being employed if necessary. The proper reduction of the fragments is determined by testing the functions of the joint. The second indication is to retain the fragments in the proper position. If the case is treated with intelligence, it makes little difference what way the splint is applied, or whether it is treated in flexion. The position is to be determined largely by the peculiarities of the individual case. He was himself inclined to favor the extended position. In regard to passive motion used early, he thought that it did more harm than good. If the parts have been properly reduced and held in position, and there is no danger of subsequent trouble, passive motion may begin in three or four weeks.

DR. E. M. MOORE, of Rochester: In a fracture of the internal condyle the cause of the displacement is the flexor muscles, and to relax these muscles the arm is to be placed in the flexed position. In fractures of the external condyle, he had also found this position the preferable one, for when the forearm is flexed, the dense fascia on the front of the arm is rendered tense and acts as an efficient splint. He objected to the extended position entirely. He treats all fractures about the elbow-joint, with the exception of fractures of the olecranon, in the rectangular position for the first ten days or two weeks. Lateral splints are used with the object of pressing the fragments together. After the tenth day the fracture is dressed every other day, the angle of the splint being changed a little each time so that the arm passes from almost complete flexion to almost complete extension. He had never had the slightest difficulty in any case since adopting this mode of treatment.

DR. JAMES M. CANN, Pittsburgh, said that it was not always easy to determine the exact nature of these fractures about the elbow-joint, even with the patient under the influence of an anæsthetic. While the patient is under the anæsthetic the preliminary dressing should be applied. He recommended the use of the internal angular splint, preferably that suggested by Dr. Packard. He did not favor the use of passive motion at an early stage. Passive motion should not be resorted to prior to the twentieth day.

DR. JOHN B. ROBERTS, Philadelphia, thought that the teaching advocated by some of the speakers was to a large extent dangerous and incorrect, that is, that injuries about the elbow-joint should be treated in the flexed position. He believed that except in unusual cases these fractures should be treated in the extended position, according to the doctrine advocated by Dr. Allis. In this way the gun-stock deformity is avoided. He now approached fractures of the elbow with the same certainty of getting a good result as he did fractures of the lower end of the radius.

DR. S. H. WEEKS, Portland, dwelt upon the fact that all authorities, with few exceptions, advised the flexed position in the treatment of fractures about the elbow-joint. Until there was more positive evidence of the value of the extended position, he thought it better to continue to treat these fractures in the flexed position. He employed passive motion in a modified way. After two weeks' treatment the splints are removed, and the joint moved gently, but not sufficiently to cause pain. This simply alters the relations of the parts without doing any damage.

DR. L. MCLANE TIFFANY, Baltimore, thought that, as good results were reported from various dissimilar methods of treatment, we must conclude that the prognosis of elbow injuries depended more upon the patient than upon the surgeon. Fracture of the elbow is rare in adults and common in children; and in children, with reasonably good treatment, there should be a good result, and by the time adult age was reached, the motion would be almost perfect. In the adult the prognosis is more grave. He had had good results both with the flexed and with the extended position. In compound fractures, the secret lies in the relief of tension, irrespective of the apparatus employed. Incision up and down the arm, through the strong fascia, should be made as freely as may be required.

RETRO-PERITONEAL TUMORS: THEIR ANATOMICAL RELATIONS, PATHOLOGY, DIAGNOSIS AND TREATMENT, WITH REPORT OF CASES,

by DR. ALBERT VAN DER VEER, of Albany.

As our experience in abdominal surgery increases, we find that there are yet many problems that confront us; and of these problems there are none which require more careful research and are capable of greater improvement, both in operative management and in prognosis, than new growths arising from the retro-peritoneal space. In order to bring this subject more fully to the attention of the Association, the following cases are reported:

CASE I. Miss S., age forty-two years, consulted the author in March, 1882, on account of a tumor located in the back. This was first noticed fifteen years previously. Examination showed a large tumor attached to the right side of the spine at the level of the first lumbar vertebra. It seemed attached to surrounding tissues, of a smooth contour, and hard to the touch. Operation was advised, but declined. The tumor continued to increase in size until November, 1888, when she died from other causes. The autopsy showed the origin of the growth to be the connective tissue about the right kidney. It was encapsulated, and could have been easily removed. It weighed eight pounds. The microscope revealed the presence of fat and myxomatous tissue, with an abundant small, round-cell infiltration.

CASE II. Mr. V., age forty-one years, married, was first seen May 28, 1889. Five years ago strained his back. The pain following this has not been relieved by any treatment. Three months ago he became worse. The abdomen began to enlarge. The

pain was more severe. He lost appetite and flesh. The ankles became œdematous, and a distressing cough developed. The urine was scanty and high-colored, but free from albumin and casts. The abdomen was more prominent on the right side. Fluctuation could not be elicited, but palpation gave an impression similar to that of a lipomatous tumor. On the right side there was flatness from the nipple to the crest of the ileum, with the exception of a narrow space along the border of the ribs, where there was a zone of resonance. The probability of the growth arising from the kidney was strong, and an exploratory abdominal section advised.

This was done June 1, 1889, an incision five inches long being made over the external border of the right rectus muscle. The growth was reached and the capsule divided, but from its attachments it seemed futile to attempt its removal. The patient recovered from the operation, and for a considerable period was relieved of pain. The growth continued to increase in size, and the patient died October 21, 1889. The tumor, which weighed fifty-six pounds, originated behind the peritoneum, and was attached to the right kidney. The microscope showed it to be an adipose tumor, presenting a condition of myxo-sarcoma with sarcomatous infiltration.

Case III. Mr. N., age thirty-nine, a brass-worker by occupation, began to have vague abdominal symptoms late in the year 1888, with failure of flesh and strength. In June, 1889, he developed jaundice, and a tumor was found in the left hypochondriac and lumbar region. This was as large as a child's head. An exploratory operation was advised, but refused. It was believed that the growth was connected with the left kidney. The tumor continued to grow; and in November, 1889, the patient died. The tumor was found to have sprung from the region of the left supra-renal capsule, and involved it; it also surrounded the kidney. It weighed six and one-eighth pounds. The microscope showed an appearance similar to that in Case II, but with a greater preponderance of sarcomatous and myxomatous elements.

A careful study of the reported cases and of the literature of the subject impresses one with the belief that the most frequent origin of these growths is in the connective tissue of the capsule of the kidney, and that the next most frequent seat is the supra-renal capsule. None if these tumors can be said to be absolutely benign, even those which are made up entirely of histological elements, such as lipoma-fibroma or myxoma. While they show no great tendency to recurrence after complete removal, yet from the great size to which they develop and their tendency to undergo degenerative changes, they cannot be classed as innocent growths.

In many of the reported cases the origin is not stated; and indeed it would, from the subsequent changes in anatomical relations, seem quite impossible to determine the exact origin of many of the large retro-peritoneal growths. They almost always present themselves in the line of least resistance, that is, anteriorly. A careful study of these tumors shows them to be of a mixed variety, containing both the elements of the lipoma and myxoma tissues, which are histologically very closely associated. Fat is developed from embryonal mucin, and in post-fœtal life occupies those spaces in the economy which later in the fœtus is of myxomatous elements. Doubtless many of these growths arise, under suitable conditions, from congenital neoplasms. The growths often become cystic, and reach immense proportions. They often present a numerous, round-cell infiltration, pointing to a sarcomatous element. Sarcoma, either in its typical form or in combination with other tissues, often occurs.

Diagnosis.— There is not a single symptom that is pathogenic, and the diagnosis is more dependent upon the process of exclusion. Tumors of the other abdominal and pelvic organs, as well as aneurisms and tumors of the abdominal wall, must be excluded. As already stated, many of these tumors have their origin in the capsule of the kidney or the connective tissue surrounding it. These present, in their earlier stages at least, physical signs differing in no respect from tumors of the nephritic parenchyma. In none of the cases reported has renal hæmorrhage or albuminuria with or without casts occurred — conditions which are the rule with tumors of the parenchyma of the kidney. A valuable adjunct in the diagnosis consists in noting the relation of the tumor to the intestinal tube, as shown by the insufflation of hydrogen gas.

Prognosis. — Without operative interference there is but one termination, the rapidity with which the fatal result is reached varies with the character of the growth. The mean duration of life after the discovery of the tumor is about nine months. Operative treatment offers much promise. The immediate mortality of the operation is great, yet from the hopelessness of the condition, it is to be urged with great earnestness.

In operations for the removal of retro-peritoneal growths, the choice of incision will usually fall in the line of the linea semilunaris. By the separation of the peritoneum from the internal border of the tumor, it may be attached to the internal border of the abdominal wound, making the whole field of operation extra-peritoneal. The incision of the posterior fold of the peritoneum should be external to the attachment of the mesentery of the colon, although not absolutely necessary. In the removal of the growth by enucleation, care should be taken to determine the source of the blood-supply and the relation of the great vessels. There are likely to be large, thin-walled veins deep in the wound, requiring ligature. At times it will be found necessary to remove the kidney with the tumor. As in all abdominal work, the operator should be prepared for any and every complication. After enucleation, the cavity must be thoroughly drained. The after-treatment is the same as after other severe abdominal sections.

Like all other conditions in surgery, there is certainly a better understanding of these cases going on.

A more correct and early diagnosis, as is the case in all that pertains to medicine and surgery, will surely bring a larger percentage of recoveries.

These are purely surgical cases, no medicines, no mineral waters or baths, electricity or other lines of therapeutics having, as yet, been of any service.

To the paper was appended a complete bibliography of retro-peritoneal new growths.

Intra-thoracic surgery: bronchotomy through the chest walls for foreign bodies impacted in the bronchus,

by Dr. DeForrest Willard, Philadelphia.

Dr. Willard gave the results of a number of experiments on dogs, in which an opening was made in the chest walls, one or more ribs excised, and the bronchus thus reached either anteriorly or posteriorly. The operations were all fatal.

The following conclusions were presented:

(1) In dogs, the bronchus can be reached, either anteriorly or posteriorly, through the chest walls; but the anatomical position is in such close proximity to large and important structures, that safe incision is a matter of extreme difficulty and danger.

(2) Bronchotomy through the walls of the thorax is an operation attended with great shock from collapse of the lungs, and until the technique is farther advanced, is liable to result in immediate death.

(3) Collapse of the lung is more serious in a healthy organ than in one previously crippled by disease.

(4) The serious inherent difficulties are shock, suffocation from lung collapse, enormous risks of hæmorrhage from pulmonary vessels, injury of or interference with the pneumogastric nerve, great and fatal delays owing to the exaggerated movements of the root of the lung caused by the excessive dyspnœa.

(5) Closure of the bronchial slit is slow and dangerous. To leave it open causes increasing pneumothorax by its valve action, and also permits the entrance of septic air into the pleural cavity.

(6) Although a foreign body can be reached by this route, yet removal is hazardous. To secure a subsequent complete cure seems, in the present state of knowledge, very problematical.

(7) When the presence of a foreign body in the bronchus is definitely determined, and primary voluntary expulsion has not been accomplished, there is great danger in permitting it to remain, even though it may but partially obstruct the tube. The risks, both of immediate and of subsequent inflammation, are serious.

(8) Low tracheotomy is then advisable when the presence of a foreign body is certain. It adds but little to the risks, and affords easier escape for the object, even when extraction is not feasible.

(9) *Subsequent dangers arise from severe and prolonged instrumentation, not from tracheotomy.*

(10) Voluntary expulsion is more probable after than before tracheotomy.

(11) Tracheotomy is permissible even after an object has been long in position, unless serious lung changes have resulted.

(12) The question of tracheotomy will depend largely upon the form, size and character of the foreign body.

(13) The term bronchotomy should be limited to an opening of the bronchus, and should not be employed to designate higher operations.

(14) The risks from thoracotomy and bronchotomy following unsuccessful tracheotomy are much greater than the dangers incurred by permitting the foreign body to remain.

DR. J. R. WEIST, of Richmond, said that from a study of one thousand cases in which a foreign body was impacted in a bronchus, he had reached the conclusion that the chances of the patient were better if left alone than if an operation of what was formerly called bronchotomy was done.

DR. S. H. WEEKS, of Portland, thought that in these cases tracheotomy should be performed, as this affords a chance of reaching the foreign body, and also offers a chance for the spontaneous expulsion of the body. It occasionally happens that the body is forced up against the vocal cords and then falls back, or else suffocates the patient before relief could be afforded. He reported the case of a child ten years old, who had gotten into the trachea a screw-cap that was used to close a pocket flask. It had been there several days before the patient came under observation. It was decided to open the trachea. This was done, and the patient suspended; but the foreign body did not escape. The patient was then placed in the horizontal position, and the attempt was made to remove the cap with forceps. It could be felt, but not grasped. After working unsuccessfully for some time, the patient was again suspended, and the attempt with the forceps renewed, and at once the body was grasped and removed. The patient made a perfect recovery.

DR. KINGSTON, of Montreal, reported a case in which he had removed an artificial incisor tooth with its attachments from the trachea, where it had remained for three months. The operation necessitated prolonged manipulation, but was followed by no bad results.

DR. HOWARD MARSH, England, thought that on account of the danger of leaving the foreign body in the bronchus, the uncertainty in regard to the possibility of removal until the attempt is made, and the safety of tracheotomy, the operation should be performed. The operation should be performed in all these cases, as it gives the patient a chance where otherwise he perhaps has none.

MR. ARTHUR EDWARD DURHAM, of London, agreed with the author of the paper that the operation through the chest wall was a dangerous and doubtful procedure. The more he saw of these cases the more satisfied was he that the proper thing to do where there is clear evidence that a foreign body is impacted in the bronchus, is to open the trachea low down, and endeavor to remove the foreign body or to facilitate its spontaneous expulsion. This opinion was the result of considerable experience.

DR. LOUIS A. STIMSON read a paper on

OLD UNREDUCED DISLOCATIONS OF THE ELBOW.

The following papers were read by title:

FRACTURES INVOLVING THE UPPER THIRD OF THE FEMUR, EXCLUSIVE OF THE NECK,

by DR. O. H. ALLIS, Philadelphia.

FRACTURES OF THE BONES WHICH FORM THE ELBOW-JOINT, AND THEIR TREATMENT,

by DR. LEVI C. LANE, San Francisco.

HEMIPLEGIA WITH APHASIA, FOLLOWING LIGATURE OF THE COMMON CAROTID ARTERY,

by DR. J. EWING MEARS, Philadelphia.

INVESTIGATION OF PISTOL-SHOT WOUNDS OF THE SKULL, AND THEIR TREATMENT,[1]

by DR. E. H. BRADFORD, Boston.

THE RESULTS OF EXPERIMENTS IN THE FILLING OF BONES FOLLOWING OPERATIONS FOR CARIES,

by DR. E. H. BRADFORD, Boston.

After extending a vote of thanks to the retiring President, the Association adjourned, to meet in Boston, Mass., in June, 1892.

CONSIDERING the present condition of the streets of Boston, notices like the following, to be seen at the ends of open street-cars, are especially timely:

AVOID – 1776 – ACCIDENTS.

DO NOT GET OFF THIS CAR WHILE IT IS IN MOTION.

[1] See page 400 of the Journal.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, OCTOBER 15, 1891.

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ADVICE TO THE MEDICAL STUDENT.

WITH the opening of the medical schools the British medical journals come to us laden, as usual at this period of the year, with introductory addresses. Some of these are of more than usual interest, contain less than usual of the banal and commonplace, and offer less than usual material for those who argue in favor of the abolition of such addresses. One of these lectures reviews the work and life of Pasteur, with which it adorns the tale of progress in scientific medicine, and points the appropriate moral. And, by the way, it is a little curious that, although Pasteur's name and discoveries are referred to in several addresses, those of Koch are hardly mentioned. Another lecturer, Sir J. Crichton-Browne, discourses eloquently and sagaciously upon "Old Age," and, notwithstanding the strangeness of the subject for the ears of the young and its previous treatment by the pen of Cicero, has found much to say, and a way to say it that makes it good hearing or reading for any period of life. "Depend upon it, the best antiseptic against senile decay is an active interest in human affairs, and that those keep young longest who love most" — this is a good apothegm, which cannot be offered too soon by those having experience of active life to those about to fit themselves for entering upon it.

Mr. Victor Horsley, addressing the medical students of University College, London, chose the practical subject of: "What are the factors which shall enable us to succeed in the practice of our profession, — not merely to succeed in gaining a livelihood, but in properly fulfilling the other part of our duty, the furtherance of general medical science by the accumulation of fresh facts, and the invention of fresh procedures for the relief of suffering humanity?" In opening his address, Mr. Horsley says:

"I had considerable hesitation in accepting the responsibility of addressing you to-day, from the feeling that it would be impossible for me to say anything to you which had not been vigorously and eloquently discussed by one or other of my predecessors. On inquiry, however, I found that, almost without exception, these addresses were devoted either to the consideration of medical politics or of recent changes in medical education, or, finally, to the panegyric of medicine as a splendid and noble profession. On this last point it is, I believe, quite unnecessary for me to further dilate. In the first place, you would not, I am sure, have selected it as your means of gaining a livelihood had you not been fully convinced of its merits; and, secondly, so striking an object-lesson in disinterestedness is being daily afforded by the members of the profession already engaged in it that no words of mine are needed to emphasize its virtues more clearly. I do not myself know of any other profession, the constant aim of whose members is to deprive themselves of their own sources of income for the good of the public, yet this Quixotic act is that which is exemplified by all those who are striving to forward sanitary work and to strike at the roots of disease. I may perhaps add that the public are not apparently conscious of this view of the case, or organized attacks on such individuals as Pasteur, Lister, and others and their followers, would not be permitted, and the rewards which would be assigned to such benefactors of society would more adequately represent their services. As, however, I have been saying, disinterestedness is a distinguishing mark of the profession, and both the public and the State seem determined that it shall continue to be so."

Leaving, therefore, at one side questions of medical politics and medical education, Mr. Horsley proceeds to consider how one is to make his way in the profession. Looking at our work, from the point of view of practice as a commercial process, it seems to him that the problem to be considered resolves itself into, What do our patients ask for from us? If a patient or his friends come to you, there are three things which he or they wish to know: (1) What is the matter with him? (2) How will it end? (3) How can he be relieved or cured? Now, the first of these is diagnosis; the second, prognosis; and the third, treatment. Of these, to his mind the second — namely, prognosis — is unquestionably the most important to the patient and his friends, and it is plain why this should be so. For in the large majority of cases, even if their nature be explained in the easiest possible and most popular manner, the public learn little or nothing from the statement that they have such and such a disease; and even if, as appears to be the developing fashion, they buy a dictionary of medicine, and read up the article which treats of their particular complaint, they are very little wiser. They come, therefore, for special or expert knowledge of what the disease will do, how it will end, and what will be their future, and this is the most difficult part of our work as well as the most important. In attempting to equip themselves for this purpose students will be fulfilling not only the dictates of a logical analysis of scientific education, but will, at the same time, accomplish much for the advancement of the highest interests of our profession.

There are, it seems to Mr. Horsley, always two phases of any education, whether technical or primary: the first is that wherein, consciously or unconsciously, we are training ourselves how to learn — that is, how to observe, and how to form accurate deductions; and the second is that wherein we are accumulating facts. To us, both are of vital importance, and it is an extraordinary thing to his mind that there are persons, — he is sorry to say, actually in the profession itself — who, very ignorant themselves, do not understand the absolute necessity of our acquiring, for the purposes of

diagnosis, a precise knowledge of the minutest points in anatomy and physiology. It is not merely not a waste of time for students to devote themselves as much as possible to this work, but it is an absolute necessity if they are to fulfil one of the first requirements of success — namely, the power of forming an accurate diagnosis.

That the modern student, if completely educated, is, both as a diagnostician and as deviser of treatment, infinitely superior to the rule-of-thumb production of the old apprenticeship system, Mr. Horsley is quite convinced. He should, however, secure for himself in the hospitals opportunities, not merely for practical experience, but also for taking responsibility. As a coping-stone to the educational edifice, the student should add, if possible, the great advantage of foreign travel and experience, for in no other profession — except the law — is there necessary such a profound and varied knowledge of human nature, and in no other way can it be so profitably acquired.

The dangers and impediments which tend to block a medical man's progress and mar his success, after he has made a start, Mr. Horsley divides under two headings, professional and social. As far as lies in his power, the young practitioner should try to keep himself abreast of the progress in medical science, by a post-graduate course and the regular reading of medical journals. One should always do one's best, and then not be too much cast down by the miscarriage of one's hopes in a given case. Questions of mere ethics should be easily settled, but questions involving honor admit of no compromise; and blackmail should never be submitted to.

One should remember, that, while he himself is a unit in a large profession, that profession is but one among various communities of men, and should, therefore, think both of what he owes to his profession and science as well as to the community at large.

Finally, the medical profession is one in which honest work is sure to succeed, and in which the actual work is always interesting and always advancing.

TREATMENT OF DIPHTHERIA BY IRRIGATIONS OF SALICYLIC ACID.

Parisot, of Thillot in Vosges, has published in the *Bulletin Général de Thérapeutique*, for September 15, 1891, an article in which he highly commends in diphtheria the employment of irrigations of salicylic acid (1–1000), and affirms that whereas before resorting to this method of treatment, the mortality from that disease as occurring in his practice was large — ten cases out of every fourteen — in a recent epidemic in which he has relied on the irrigations, there were only five fatal cases out of every twenty-four.

The formula which this writer employs is as follows:

℞	Acid salicylic	1 gm.	
	Water	980 gms.	
	Alcohol (96%)	20 "	M.

Dissolve the salicylic acid in the alcohol, and add the water.

The apparatus which he uses for the irrigation is simply a fountain syringe with the "recipient" or "fountain" of tin; this fountain is hung on the wall over the patient; the rubber tubing which is connected with the lower extremity of the fountain ends in a small glass tube tapering at the point like a dropping-tube. A spring "catch" on some part of the tubing interrupts the current of liquid at will. When the fountain is charged with the solution and ready for action, the head of the child is held by an assistant, the tongue depressed, and the jet directed into the mouth and posterior pharynx with sufficient force to detach and remove the false membranes if they happen to be loose.

Parisot likes best the position in which the child is held with the head forward and a little downward. Where the child is very feeble, it may be supported upon the arm of the assistant with the face turned toward the floor. In this position it may be more difficult to perform the irrigations, but there is more certainty that the liquid will flow back again, and not be swallowed in any quantity.

As for the quantity of the liquid to be used in each irrigation, this must be left to the judgment of the physician; it may not amount to more than three or four ounces each time, but in grave cases the oftener the irrigation is practised the better. The use of the irrigations does not make unnecessary other remedial measures, such as the frequent administration of stimulants.

Parisot makes some remarks as to the action of salicylic acid on false membranes which, if true, are of great practical importance. He believes he ascertained by experiment that this acid is destructive to diphtheritic formations; in distilled water, the false membrane was simply disaggregated, and this disaggregation took place slowly, while in solutions of different strengths of salicylic acid, the exudate disappeared rapidly; at the end of a few minutes, nothing was found but the meshes of the net-work serving for support to the cells of the exudation. The stronger the solution of salicylic acid the more prompt and complete was the disappearance of the exudate.

Parisot has, moreover, noticed that in diphtheritic throats that have been irrigated with the salicylic solutions, false membranes, when once detached, are reproduced more slowly and imperfectly than when the throat is cleared by any other process; he hence concludes that the mucous membrane is favorably modified by the salicylic acid, and rendered unfit for the reproduction of the diphtheritic patches, and hence, for the culture of Loëffler's bacillus.

Salicylic acid in weak solutions has been often employed locally in cases of diphtheritic angina. Berthold, of Dresden, derived benefit from such applications in stomatitis, thrash, and diphtheritic sore throat. Moizard and Bergeron claimed success from the use of this remedy, and Goutheim, out of thirty-one cases treated by swabbings with salicylic solutions, did not lose a patient. D'Espine and Picot have also treated

several cases by irrigations with solutions of varying strength, and have been pleased with the results.

Weise was one of the first to advocate the topical use of this acid in diphtheria. His method is to begin treatment by painting the throat with a tolerably strong solution, then he causes a weaker solution to be inhaled; half an hour afterwards he gives the patient a swallow of wine; in another half-hour, a spoonful of a strong solution of benzoate of soda, then a little more wine, and when two hours come around, the series begins again with swabbing or gargling with the salicylic solution. The result of his success, according to Guelpa, from whose paper we quote,[1] is, that he does not let half an hour during the day elapse (the interval is a little longer during the night) without irrigating or otherwise cleansing the throat of the patient with some efficient antiseptic substance, wine, solution of salicylic acid or benzoate of soda. To many the profit of so much meddling, either locally or constitutionally, will seem doubtful.

MEDICAL NOTES.

Professor Virchow's Birthday. — A meeting was held at the library of the Johns Hopkins Hospital last Tuesday, in honor of Professor Virchow's seventieth birthday.

Influenza in Portugal. — During the month of August the northern parts of Portugal were visited by a severe epidemic of influenza, which in a large proportion of cases assumed a form resembling typhoid fever. A good many cases also occurred in Lisbon, and in one week of August the mortality from pneumonia, and in another that from intestinal catarrh, was exceptionally large.

BOSTON AND NEW ENGLAND.

Harvard University. — The Medical Department of Harvard University has an entering class of 170, and in the Law School 185 new students have entered, of whom 145 are in the first-year class.

Dr. Albert Day, the President of the Association for the Study and Cure of Inebriety, celebrates his seventieth birthday to-day. The Association will hold a public meeting in the Chapel of the Washingtonian Home at eight o'clock, to be preceded by a reception in the parlor of the Home.

The Firing of Cannon on Boston Common. — The fortunate existence of an open space in the very centre of a large city is surely no excuse for discharging cannon in it, causing a jar distinctly felt for a mile in all directions. To say nothing of the unwelcome surprise with which a healthy person is greeted when one of our artillery companies are practising or celebrating, the number of sick persons and nervous invalids within a short distance of the Common is not small, and of these many may be more or less seriously affected by such bombardments as we from time to time receive.

[1] Soc. de Méd. Pratique, Séance du 7 Mars, 1889.

The Margaret Pillsbury Hospital at Concord, N. H. — Early in the year 1890, Hon. George A. Pillsbury, of Minneapolis, Minn., announced his purpose to build for the hospital association in Concord, a hospital as a memorial to his wife, to be known as the Margaret Pillsbury General Hospital. The building has been completed, and was last week formally turned over by Mr. Pillsbury to the association, with appropriate ceremonies. It is 124 by 70 feet, cost about $100,000, and will accommodate fifty patients.

Miscellany.

BOSTON DISPENSARY.

The statistics of this institution for the year ending September 30, 1891, are as follows:

The number of new patients treated at the Central Office is 25,859, classified as follows:

Medical Department. — Men, 3,276; women, 5,267; children, 3,071; total, 11,614.

Surgical Department.—Men, 2,445; women, 1,167; children, 818; total, 4,430.

Skin Department. — Men, 665; women, 462; children, 261; total, 1,388.

Department for Diseases of the Nervous System. — Men, 700; women, 499; children, 82; total, 1,281.

Department for Diseases of the Throat and Nose. — Men, 915; women, 866; children, 507; total, 2,288.

Department for Diseases of Women. — Women, 803; total, 803.

Department for Diseases of the Eye. — Men, 287; women, 345; children, 282; total, 914.

Department for Diseases of the Ear. — Men, 177; women, 168; children, 230; total, 575.

Department for Diseases of the Genito-Urinary System. — Men, 1,236; women, 31; children, 1; total, 1,268.

Department for Diseases of the Rectum. — Men, 129; women, 68; children, 12; total, 209.

Orthopedic Department. — Men, 37; women, 26; children, 33; total, 96.

Dental Department. — Men, 232; women, 319; children, 442; total, 993.

The number of visits made by patients, old and new, at the Central Office is 59,892, classified as follows: Medical, 21,382; surgical, 38,510; total, 59,892. The number of patients treated in the Districts is 16,257 (including 438 cases of midwifery), classified as follows: Men, 2,996; women, 6,276; children, 6,985; total, 16,257. The results of treatment in the Districts are as follows:

Discharged, cured or relieved	15,019
Removed to hospitals	879
Died	341
Remaining under treatment	83
	16,322
Under treatment at last annual report	65
	16,257
The number of patients treated at the Central Office and in the Districts is	42,116
The number of cases of midwifery attended during the year	438
The number of cases since July, 1856	6,604
Whole number of patients treated since October, 1796,	1,115,109
Whole number of patients treated since July, 1856	936,306
Average daily attendance at Central Office during the year	196
Largest number present any one day, May 11th	317
Smallest number present any one day, March 4th	102
Number of recipes put up at the Central Office during the year	62,716
Number of house recipes	50,116
Number of district recipes	12,600
Largest number of recipes put up in one day, April 27th,	361
Smallest number of recipes put up in one day, August 28th	97
Number of paid recipes	56,661

Number of free recipes	6,055
Number of paid dental patients	925
Number of free dental patients	68

The list of medical officers for the ensuing year is as follows:

Surgeons: Drs. Edward O. Otis, Frederic M. Briggs, Arthur K. Stone, Paul Thorndike. Physicians: Drs. Robert Disbrow, John Dixwell, Thomas M. Rotch, Claudius M. Jones, Harold Williams, George M. Garland, Edward M. Buckingham, William C. Emerson, Robert B. Dixon, Russell Sturgis, Thomas F. Sherman, James S. Howe, William F. Temple, Henry Jackson, Henry C. Baldwin, Robert W. Greenleaf, William S. Boardman, Samuel Breck.

Department for Diseases of the Skin. — Drs. Francis B. Greenough, Abner Post.

Department for Diseases of the Nervous System. — Drs. William S. Bullard, John A. Jeffries, Elliott G. Brackett.

Department for Diseases of the Throat and Nose. — Drs. John W. Farlow, J. Payson Clark, Algernon Coolidge, Jr., Frederic C. Cobb.

Department for Diseases of Women. — Drs. Francis H. Davenport, John B. Swift, Rufus A. Kingman, George Haven.

Department for Diseases of the Eye. — Drs. William D. Hall, Edwin E. Jack.

Department for Diseases of the Ear. — Drs. William S. Bryant, Wallace Preble, Ernest E. Doble.

Department for Diseases of the Genito-Urinary System. — Drs. George H. Tilden, Francis S. Watson, Hayward W. Cushing, Gardner W. Allen.

Department for Diseases of the Rectum. — Drs. Walter J. Otis, William D. Hodges.

Obstetric Department. — Dr. Charles M. Green. Assistants, Drs. Edward Reynolds, Charles W. Townsend.

Orthopedic Department. — Dr. Augustus Thorndike.

Pathologist. — Dr. Edward M. Greene.

Dentist.—Dr. Alexander H. Fisher.

District Physicians. — Drs. Willis B. McMichael, George A. Sargent, George A. Craigin, Richard Sprague, Joel E. Goldthwait, Chauncey R. Burr, George H. Washburn, William H. Prescott, Edward L. Twombly, James R. Draper, Charles D. Fillebrown.

Apothecary. — Frederick H. Dudley. Assistant Apothecary, Joseph S. Lang.

Wm. H. H. Hastings, M.D., *Supt.*

SUBMEMBRANOUS LOCAL TREATMENT OF DIPHTHERIA.

At the last meeting of the American Medical Association, Dr. A. Seibert, of New York, reported thirty-five cases of pharyngeal diphtheria treated by submembranous injections, with a demonstration of the methods employed. He pointed out that the various antiseptics applied to the throat do not reach and destroy the bacilli underlying the false membrane. In order to effect this object, he injects by means of hypodermic needle-points, an antiseptic into the inflamed mucous membrane under the affected part. He uses a hypodermic syringe, to which can be attached a long tube terminating in a flat, hollow extremity, from which projects a number of short hypodermic needles. A variety of shapes enable these needle points to be pressed into any part of the affected pharyngeal mucous membrane. After placing the syringe in position he presses the needles into the submucous tissue and then injects about twenty millimetres of chlorine water. This liquid he finds to be the most suitable, the safest, and the strongest antiseptic for this purpose. Of the cases reported he had only lost two, and then from complications. The general treatment is at the same time carried out with careful attention to detail.

THERAPEUTIC NOTES.

Europhen, a New Substitute for Iodoform. — By the action of iodine on members of the phenol series in alkaline solution a number of antiseptic substances have been formed, of which aristol (dithymol-di-iodide) has already been largely used. Goldmann[1] describes another to which the name europhen has been given. Chemically it is isobutyl-ortho-kresol iodide, and is formed by the action of iodine on isobutyl-ortho-kresol. It is an amorphous yellow powder with a peculiar aromatic smell, which disappears almost entirely when it is dissolved in or mixed with some menstruum; it is insoluble in water and glycerine, but very soluble in alcohol, ether, chloroform, and collodion. In fatty oil it dissolves to the extent of twenty-five per cent. Its solution in all these menstrua is apt to decompose, and deposits an iodine compound which is soluble in water. In contact with water or with secretions iodine is slowly given off, and on this depends no doubt its antiseptic action. Mixed with fat, lanolin, or vaseline it keeps well, but it cannot be prescribed along with starch, or with most metals, as the free iodine causes discoloration. It can be used in all cases where iodoform is useful, and has the advantages over it of being non-poisonous, of having comparatively little odor, and of being so light that a small weight can be dusted over a large area.

Raising Children in Bran.[2] — This method was proposed by M. Pue at the *Société Normande d'Hygiene Pratique*. It consists of a cradle which has the wooden bottom taken out, and is then lined with a strong cloth. In this is placed sterilized bran to nearly half a yard in depth. A hair pillow is used. The baby has only a short flannel shirt on and is naked from the navel downward. It is covered with a woollen blanket, and a wool-lined dress is kept to put it in when taken up for nursing. It has thus full liberty of movement in all its limbs, while its dejections pass at once into the pure bran, keeping the child dry and clean, even if there is diarrhœa. This method is a cheap one, the bran not costing as much as diapers.

[1] Pharmaceut. Zeitung, July 15th.
[2] Archives of Pediatrics, September.

METEOROLOGICAL RECORD,

For the week ending September 27, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
M..21	30.09	68	78	59	77	79	78	S.W.	S.	7	5	C.	C.	
T..22	30.15	63	64	61	95	90	93	N.	S.E.	3	2	O.	O.	
W..23	30.19	69	75	62	88	90	89	N.W.	E.	7	9	F.	O.	T.
T..24	30.23	69	76	62	82	90	81	S.E.	S.W.	7	16	O.	C.	
F..25	30.07	78	86	65	86	82	84	S.W.	S.W.	12	16	C.	C.	
S..26	30.16	72	79	65	68	82	75	N.W.	S.E.	11	6	C.	C.	
S..27	30.27	64	68	60	100	69	85	S.E.	S.	3	8	O.	O.	
☞	30.16		75	62			84							

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; F., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, SEPTEMBER 26, 1891.

Cities.	Estimated population for 1890.	Reported deaths in week.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	811	384	24.66	13.19	14.30	2.96	3.70
Chicago	1,099,850	545	262	31.17	5.87	13.20	9.72	3.48
Philadelphia	1,046,964	—	—	—	—	—	—	—
Brooklyn	806,343	416	205	25.48	10.57	14.90	2.88	4.08
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	205	81	13.66	14.63	9.26	3.41	.49
Baltimore	434,439	178	77	23.03	11.80	11.23	2.25	4.50
Cincinnati	296,908	103	37	13.59	7.76	4.85	2.91	3.88
Cleveland	262,000	100	41	18.00	3.00	6.00	6.00	3.00
New Orleans	242,039	—	—	—	—	—	—	—
Pittsburg	240,000	119	56	34.45	10.09	5.88	8.40	15.12
Milwaukee	240,000	92	58	32.61	7.61	19.56	1.08	3.16
Washington	230,392	107	44	28.97	7.48	10.28	6.60	5.60
Nashville	76,168	28	19	35.71	7.15	21.45	7.15	—
Charleston	65,166	44	19	22.72	18.18	11.36	2.27	—
Portland	36,425	12	3	8.33	25.00	8.33	—	—
Worcester	84,655	26	12	30.77	15.39	7.69	7.69	7.69
Lowell	77,696	52	31	32.69	7.69	23.04	3.84	—
Fall River	74,398	43	25	46.51	—	30.23	16.28	—
Cambridge	70,028	20	7	15.00	10.00	5.00	10.00	—
Lynn	55,727	15	10	40.00	—	6.66	6.66	6.66
Lawrence	44,654	22	10	18.18	—	9.09	4.54	4.54
Springfield	44,179	8	—	—	25.00	—	—	—
New Bedford	40,733	22	13	18.18	13.54	13.54	4.54	—
Salem	30,801	12	3	8.33	—	—	8.33	—
Chelsea	27,909	16	7	12.50	6.25	12.50	—	—
Haverhill	27,412	8	2	25.00	25.00	12.50	—	12.50
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,448	3	1	—	—	—	—	—
Gloucester	24,651	5	2	40.00	40.00	40.00	—	—
Newton	24,379	5	1	—	40.00	—	—	—
Malden	23,031	6	3	16.66	33.33	—	—	16.66
Fitchburg	22,037	9	4	—	—	—	—	—
Waltham	18,707	5	1	20.00	—	20.00	—	—
Pittsfield	17,281	3	—	33.33	33.33	33.33	—	—
Quincy	16,723	5	3	—	—	—	—	—
Newburyport	13,947	6	3	33.33	—	33.33	—	—
Medford	11,079	5	3	—	—	—	—	—
Hyde Park	10,193	6	2	33.33	—	—	16.66	—
Peabody	10,158	4	3	50.00	25.00	50.00	—	—

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 3, 1891, TO OCTOBER 9, 1891.

WILLIAM H. FORWOOD, surgeon, U. S. A., granted leave of absence for one month, on account of sickness.

Colonel CHARLES T ALEXANDER, chief medical purveyor, U. S. A., relieved from duties of attending surgeon and examiner of recruits in New York City, and assigned to the charge of the medical purveying depot in that city.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 10, 1891.

S. H. DICKSON, surgeon, ordered to Marine Barracks, Washington, D. C.

A. F. MAGRUDER, surgeon, detached from Marine Barracks, Washington, D. C.

N. McP. FEREBEE, surgeon, ordered to the U. S. S. "Atlanta."

M. C. DRENNAN, surgeon, detached from the U. S. S. "Atlanta."

J. R. TRYON, surgeon, ordered to the U. S. S. "Chicago."

J. C. WALTON, medical inspector, detached from the U. S. S. "Chicago," and granted six months' leave.

J F. KEENEY, passed assistant surgeon, from the U. S. S. "Minnesota," and to the Naval Hospital, New York.

R. P. CRANDALL, passed assistant surgeon, from the Naval Hospital, New York, and to the Naval Laboratory.

ROBERT BOYD, assistant surgeon, from the Marine Rendezvous, Boston, and to the U. S. S. "Chicago."

A. R. ALFRED, assistant surgeon, from the U. S. S. "Fern," and to the U. S. S. "Kearsarge."

M. F. GATES, assistant surgeon, from the U. S. S. "Kearsarge," and to the U. S. S. "Fern."

HOWARD E. AMES, surgeon, ordered as delegate to the Public Health Association, Kansas City, Mo., October 20, 1891.

JAMES H. NORTH, assistant surgeon, resignation accepted September 8, 1891.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene will meet at Huntington Hall, Massachusetts Institute of Technology, on Wednesday, October 21st, at 7.45 o'clock.

Dr. L. W. Baker, of Baldwinville, Mass., will read a paper upon "The Care of Epileptics." The subject will be discussed by F. B. Sanborn, Esq., of the Massachusetts State Board of Lunacy and Charity; Mrs. Mary A. Livermore; Dr. C. Irving Fisher, of the State Almshouse at Tewksbury; Dr. S. Fernald, Superintendent of Massachusetts Idiotic School; Dr. W. N. Bullard; Dr. T. W. Fisher, Boston Lunatic Asylum; Dr. S. G. Webber; Dr J. J. Putnam; Dr. Morton Prince; Dr. F. W. Page; and others.

ALBERT N. BLODGETT, M.D., *Sec'y.*, 330 Boylston St.

THE NEW YORK STATE MEDICAL ASSOCIATION will hold its eighth annual meeting Wednesday, Thursday and Friday, October 28, 29 and 30, 1891, at the Mott Memorial Hall, 64 Madison Avenue, near 27th Street, New York City.

E. D. FERGUSON, M.D., Troy, N. Y., *Secretary.*

THE AMERICAN PUBLIC HEALTH ASSOCIATION will meet at Kansas City, October 20th-23d.

THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. — A session will be held in Richmond, Va., November 10-12, 1891. LOUIS S. MCMURTRY, M.D., *President.*

W. E. B. DAVIS, M D., Birmingham, Ala., *Secretary.*

VERMONT STATE MEDICAL SOCIETY. — The seventy-eighth annual meeting will be held in Burlington, October 15 and 16, 1891. D. C. HAWLEY, M.D., Burlington, *Secretary.*

APPOINTMENTS.

FRANK W. REILLY, M.D., of Chicago, formerly a Surgeon in the Marine-Hospital Service, has been appointed Secretary of the Illinois State Board of Health.

JAMES C. WILSON, M.D., has been appointed Professor of the Practice of Medicine and Clinical Medicine in the Jefferson Medical College, Philadelphia.

ALFRED KING, M.D , has been elected Attending Surgeon of the Maine General Hospital *vice* F. H. Gerrish, M.D., resigned.

RECENT DEATHS.

CHRISTOPHER JOHNSTON, M.D., of Baltimore, Md., died October 11th, aged sixty-nine. He graduated from the University of Maryland School of Medicine in 1844. In 1855 he was Lecturer at the University on Physiology, and in 1864 he became Professor of Anatomy and Physiology. In 1869 he became Professor of Surgery, as the successor of Professor N. R. Smith, and in 1881 he resigned his seat, and was appointed Professor Emeritus. He was also Consulting Surgeon to the Johns Hopkins Hospital. He was one of the founders of the pathological and clinical societies, President of the Maryland Academy of Sciences, and President of the Medical and Chirurgical Faculty of Maryland. He was a frequent contributor to scientific and medical literature, and was the author of an article on plastic surgery and skin-grafting in Ashhurst's "Encyclopædia of Surgery."

WILLIAM C. EMERSON, M.D., M.M.S.S., Assistant in Chemistry at the Harvard Medical School, died October 8th, aged thirty-eight. He graduated from Harvard College in the Class of 1875, and from the Medical School in 1880. Soon after graduation he was appointed Assistant in Chemistry, which position he has since held.

DR. G. HAHN, a well-known German military surgeon, died September 7th, aged fifty-seven.

BOOKS AND PAMPHLETS RECEIVED.

Weight of the Brain in the Feeble-Minded. By A. W. Wilmarth, M.D. Reprint.

The Proposal. A Dialogue by Zula Maud Woodhull. London: Norgate & Company.

Synopsis of the Lives of Victoria C. Woodhull and Tennessee Claflin. By G. S. Darewin.

Chart of the Metric System. By John K. Rees, Secretary American Metrological Society. New York. 1891.

The Snook-Herr Poisoning. The Official Investigation, Preliminary Examination. By H. M. Goodman, M.D. Reprint. 1891.

Transactions of the State Medical Society of Wisconsin for the Year 1891, Constitution and By-Laws, and List of Members. Charles S. Sheldon, M.D., Madison, Secretary.

Address.

RUDOLF VIRCHOW. THE MAN AND THE STUDENT.[1]

BY WILLIAM OSLER, M.D.,
Physician and Professor of Medicine in the Johns Hopkins University.

By his commission the physician is sent to the sick, and knowing in his calling neither Jew nor Gentile, bond or free, perhaps he alone rises superior to those differences which separate and make us dwell apart, too often oblivious to the common hopes and common frailties which should bind us together as a race. In his professional relations, though divided by national lines, there remains the feeling that he belongs to a Guild which owes no local allegiance, which has neither king nor country, but whose work is in the world. The Æsculapian temple has given place to the hospital, and the priestly character of the physician has vanished with the ages; still there is left with us a strong feeling of brotherhood, a sense of unity, which the limitations of language, race, and country have not been able to efface. So it has seemed meet and right to gather here this evening to do honor to a man — not of this country, not of our blood — whose life has been spent in the highest interests of humanity, whose special work has revolutionized the science of medicine, whose genius has shed lustre upon our craft.

The century now drawing to a close has seen the realization of much that the wise of old longed for, much of which the earnest spirits of the past had dreamt. It has been a century of release — a time of the loosening of bands and bonds; and medicine, too, after a long enslavement, ecclesiastical and philosophical, received its emancipation. Forsaking the traditions of the elders, and scouting the Shibboleth of schools and sects, she has at last put off the garments of her pride, and with the reed of humility in her hand sits at the feet of her mistress, the new science. Not to any one man can this revolution be ascribed: the *Zeit-geist* was potent, and like a leaven worked even in unwilling minds; but no physician of our time has done more to promote the change, or by his individual efforts to win his generation to accept it, than Rudolf Virchow.

And now, as the shadows lengthen, and ere the twilight deepens, it has seemed right to his many pupils and friends, the world over, to show their love by a gathering in his honor, on this his seventieth birthday. To-day, in Berlin, a *Fest* has been held, in which several hundred members of the profession in this and other countries have been participants, as subscribers to the fund which was organized for the occasion. It seemed well, also, to his pupils who are teachers in this university, and to others, that the event should be marked by a reunion at which we could tell over the story of his life, rejoice in his career, and express the gratitude which we on this side of the Atlantic feel to the great German physician.

Let me first lay before you a brief outline of his life:

Rudolf Virchow was born October 13, 1821, at Schivelbein, a small town in Pomerania. Details of his family and of his childhood, which would be so interesting to us, are not available. Educated at the Gymnasium in Berlin, he left it at Easter, 1839, to begin his medical studies, and graduated from the University of that City in 1843. The following year he became assistant in pathological anatomy to Froriep; and in 1846 he was made prosector, and in 1847 a lecturer at the university. In 1849, on account of his active participation in the political events of the previous year he was dismissed from his university positions, and, as he mentions was only *mit grossen beschränkungen* reinstated, largely in fact by the efforts of the profession of Berlin, and particularly of the medical societies. In August, 1849, he received a call to the chair of pathological anatomy at Wurzburg, a position which he held until 1856, when, by the unanimous vote of the faculty, he was recommended for, and received the appointment which he still holds, namely, professor of pathological anatomy at Berlin. Prior to leaving Berlin he founded, in 1847, his celebrated *Archiv*, which now in its one hundred and twenty-eighth volume, is the greatest storehouse of facts in scientific medicine possessed by us to-day.

Externally, at least, an uneventful, quiet, peaceable life with few changes.

As an illustration of the successful pursuit of various callings, Virchow's career is without parallel in our profession, and this many-sidedness adds greatly to the interest of his life. Dr. Welch will speak of his special labors in the science of pathology; and other aspects will be considered by Dr. Chew and Dr. Friedenwald. I propose to indicate briefly a few traits in his life as a man of science and as a citizen.

From the days of the great Stageirite, who, if he never practised medicine, was at least an asclepiad and an anatomist, the intimate relation of medicine with science, has in no way been better shown than in the long array of physicians who have become distinguished in biological studies. Until the gradual differentiation of subjects, necessitated by the rapid growth of knowledge, the physician, as a matter of course, was a naturalist; and in the present era, from Galen to Huxley, the brightest minds of the profession in all countries, have turned towards science as a recreation or as a pursuit. Alas! that in the present generation, with its strong bent toward specialism, this combination seems more and more impossible. We miss now the quickening spirit and the wiser insight that come with work in a wide field; and in the great cities of this country we look in vain among practising physicians for the successors of Jacob Bigelow of Boston, Holmes of Montreal, Barton of Philadelphia, and others — men who maintained in this matter an honorable tradition, whose names live in natural history societies and academies of natural science, in the founding of which they were mainly instrumental.

In anthropology and archæology the name of Rudolf Virchow is almost as well known as it is in medicine. Very early in his work we find evidences of this bent in the memorable studies, now forty years ago, on Cretins and on the development of the skull. Not a year has passed since that time without some notable contribution from him on these subjects; and those of us who know only his professional side may well marvel at the industry of the man whose name is quoted and appears in anthropological memoirs and journals as often as in our technical works. In recognition of his remarkable labors in this department, a special anthropological institute was organized in 1881, on the occasion of the twenty-fifth year of his professoriate. In 1884, on returning to Berlin for the first time since

[1] Remarks made at the Virchow celebration, Johns Hopkins University, Baltimore, October 13, 1891.

my student days, I took with me four choice examples of skulls of British Columbian Indians, knowing well how acceptable they would be. In his room at the Pathological Institute, surrounded by crania and skeletons, and directing his celebrated *diener*, who was mending Trojan pottery, I found the professor noting the peculiarities of a set of bones which he had just received from Madeira. Not the warm thanks, nor the cheerful, friendly greeting which he always had for an old student, pleased me half so much as the prompt and decisive identification of the skulls which I had brought, and his rapid sketch of the cranial characters of the North American Indian. The profound expert, not the diletanté student, has characterized all of his work in this line. Even an enumeration with a brief report of his published writings in anthropological and archæological subjects would take more time than has been allotted to me. Of his relations with Schliemann I must say something, which I could not do so well as in the words used by his friend, Dr. Jacobi, ten years ago: "Schliemann, by whose modern witchcraft holy old Troy is just leaving its tomb, invited Virchow to aid him in his work of discovery of the buried city. He went — partly to aid, partly, as he says, to escape from overwhelming labors at home — only to be engrossed in just as hard work, though of a different nature. In regard to the latter, Schliemann's recent book on 'Ilios' contains some very interesting material. But what has engaged my attention and interest most has been to observe the humanity and indefatigability displayed by the great man in the service of the poor and sick. To read of his constant, practical exertions in behalf of the miserable population of Hissarlik; how he taught the aborigines the efficacy of chamomile and juniper, which grow about them, unnoticed and unused, in rare abundance; how a spring he laid open for archæological purposes has been called by them 'the physician's' and is believed to have beneficial effects; how he was, on leaving the neighborhood, loaded with flowers, the only thing they had and knew would please him, has charmed me intensely. To admire a great man for his professional labors, eagerly undertaken and successfully carried out, is a great satisfaction to the scientific observer; to be able to love him, in addition, for his philanthropy and warm-heartedness, is a feast of the soul."

Virchow's life-work has been the study of the processes of disease, and in the profession we revere him as the greatest master that has appeared among us since John Hunter. There is another aspect of his work which has been memorable for good to his native city. From the day when, as a young man of twenty-seven, he was sent by the Prussian government to Upper Silesia to study the typhus epidemic, then raging among the half-starved population, he has been one of the most powerful advocates in Germany for sanitary reform; and it is not too much to say that it is largely to his efforts that the city of Berlin owes its magnificent system of drainage. His work in this department has been simply monumental, and characterized by the thoroughness which marks the specialist.

To his exhaustive monographs on camp-diseases, cholera, military medicine, and other cognate subjects, I cannot even refer.

It will be generally acknowledged that in this country doctors are, as a rule, bad citizens, taking little or no interest in civic, state or national politics. Let me detain you a moment or two longer to tell of one of us, at least, who, in the midst of absorbing pursuits, has found time to serve his city and his country. For more than twenty years Virchow has sat in the Berlin City Council as an alderman, and to no feature in his extraordinary life does the Berliner point with more justifiable pride. It is a combination of qualities only too rare, when the learned professor can leave his laboratory and take his share in practical, municipal work. How much his colleagues have appreciated his efforts has been shown by his election as Vice-president of the Board; and on the occasion of the celebration in 1881, the *Rathhaus* was not only placed at the disposal of the committee, but the expenses of the decorations, etc., were met by the council; and to-day comes word by cable that he has been presented with the freedom of the city.

The years succeeding to Virchow's student days were full of strong political feeling, and with the French Revolution, in 1848, came a general awakening. In Germany the struggle for representative government attracted many of the ardent spirits of our profession, and it was then that Virchow began his political career. The revolution was a failure, and brought nothing to the young prosector but dismissal from his public positions. His participation might have been condoned had he not issued a medico-political journal, *Die Medicinische Reform*, the numbers of which are even now very interesting reading, and contain ideas which to-day would be called liberal, but were then revolutionary. It is a striking evidence of the deep impression which even at that time Virchow had made upon his colleagues and the profession, that he was reinstated in his office at the urgent solicitation of the medical societies of the city. He relates in his "*Gedächtnissrede auf Schönlein*," who was the Court physician and not at all in harmony with the views of his prosector, that on one occasion in 1848, at a post-mortem, in which the diagnosis of hæmorrhage into the brain had been made by the professor, Virchow demonstrated an obstructing embolus in the artery. Schönlein turned to him in a half-vexed, half-joking manner and said, "Sie sehen auch ueberall Barrikaden." His active political life dates from 1862, when he was elected to the lower house from one of the Berlin districts, and has, I believe, sat as member almost continuously from that date. The conditions in Germany have not been favorable to a man of advanced liberal views, and Virchow has been attached to a party which has not been conspicuously successful; but he has been an honest and industrious worker, a supporter of all measures for the relief of the people, a strenuous opponent of all class and repressive legislation, and above all an implacable enemy of absolutism as personified in Bismarck. A man of such strong individuality would make his presence felt in any assembly; and he always commanded the attention of his colleagues, and oftentimes his speeches have been reported fully both in England and in America.

As an illustration of his capacity for varied work, I recall one day in 1884, in which he gave the morning demonstration and lecture at the Pathological Institute, addressed the Town Council at great length on the extension of the canalization scheme, and made a Budget speech in the House, both of which were reported at great length in the papers of the next day.

Naturally, amid such diverse occupations, it has been impossible for him to enter with his old vigor

into the minutiæ of pathological anatomy, and his attitude of late years has been critical rather than productive; but his interest in all that pertains to our profession is unabated, and is a feature of his character to which I must allude. Too often with us, in our gatherings and society meetings, the "men of rathe and riper years" are conspicuous by their absence. In this respect our great master has set a notable example. Amid cares and worries, social and political, with a thousand and one ties and duties, he has never held aloof from his brethren; but as the weekly medical journals testify, no man in Berlin has been more active, and for years he has held the Presidency of the Berliner Medicinische Gessellschaft, one of the most important medical societies of Europe.

Surely the contemplation of a life so noble in its aims, so notable in its achievements, so varied in its pursuits, may well fill us with admiration for the man and with pride that he is a member of our profession. The influence of his work has been deep and far-reaching, and in one way or another has been felt by each one of us. It is well to acknowledge the debt which we every-day practitioners owe to the great leaders and workers in the scientific branches of our art. We dwell too much in corners, and, consumed with the petty cares of a bread-and-butter struggle, forget that outside our routine lie Elysian fields into which we may never have wandered, the tillage of which is not done by our hands, but the fruits of which we of the profession (and you of the public) fully and freely enjoy. The lesson which should sink deepest into our hearts is the answer which a life, such as Virchow's, gives to those who to-day, as in past generations, see only pills and potions in the profession of medicine, and who, utilizing the gains of science, fail to appreciate the dignity and the worth of the methods by which they are attained. As Pausanias pestered Empedocles, even to the end, for the details of the cure of Pantheia, so there are with us still those who, "asking not wisdom, but drugs to charm with," are impatient at the slow progress of science, forgetting that the chaos from which order is now appearing has been in great part dispelled by the work of one still living — by the man whom to-night we delight to honor.

Original Articles.

SOME CONSIDERATIONS UPON LATE SYPHILIS — AND ESPECIALLY LATE HEREDITARY SYPHILIS — MORE PARTICULARLY IN ITS SURGICAL ASPECTS.[1]

BY ABNER POST, M.D., OF BOSTON.

(Concluded from No. 16, page 396.)

One of the marked features of modern medicine is the study of intestinal disorders, and the Congress, at its last meeting, gave an impetus to the study, which marks an epoch in American medical history. Has the syphilographer any contribution to make to that study? Is there any syphilitic lesion of the bowel which may confront the surgeon in his search by abdominal section for the cause of inte-tinal inflammation or obstruction? To show that the question is one liable to arise, let me say that I have recently been called upon to express an opinion whether in a case of peritonitis occurring in a man who had had syphilis several years ago, there was any reason to suppose his former syphilis had any possible connection with the peritoneal inflammation. In that case, another hypothesis offered a more probable explanation than the previous syphilis, which had lain dormant for several years. But the question as to the possible relationship was raised, which may not be unprofitable to discuss here.

Of course, the processes taking place about the spleen and liver must be taken account of as possible causes of peritonitis. The inflammation resulting in adhesions about these viscera must seldom give rise to symptoms that are recognized, but these are by no means the only possible causes of abdominal inflammation due more or less directly to syphilis.

A case of intestinal dyspepsia of aggravated type has occurred to me, which proves to my mind the existence of syphilitic intestinal difficulties that take the clinical form of severe dyspepsia. This man gave a history of urethritis simply, as antecedent. The extreme difficulty of digestion continued until a periostitis appeared on both tibiæ, which yielded to iodide of potash. The dyspepsia practically disappeared also. Syphilitic erosions have since destroyed a portion of his pharynx. That is not a unique experience. Similar cases have been reported in varying forms many times. At the present moment I have under my care a young man whose syphilis is scarcely two years old. It has been characterized by occasional symptoms of great severity and tertiary form. The original sore was accompanied by an enormous induration. Headaches have been of marked intensity. There has been an ulceration with a rupia crust on one arm, and a sarcocele. Lately, he has had an attack of severe indigestion, his stomach refused to hold anything more solid than milk and lime-water, and he has been so reduced as to be obliged to give up all occupation for a time. These symptoms do not prove actual lesions of the stomach or intestines, but, if the cutaneous lesions are an index, something more than a mere hyperæmia may be suspected. Our actual knowledge only permits us to call this man one of a class of cases with marked gastric symptoms occurring in syphilis, and amenable to anti-syphilitic treatment.

But such cases as these two occur often enough to establish the fact, that syphilis invades the intestinal tract in some manner with more or less frequency. Some of the intestinal symptoms are doubtless the result of nervous influence of syphilitic origin. Some are possibly caused by disease of the mucous coats, similar in character to cutaneous symptoms, or the lesions of the mucous membranes. It is also fairly well established that very serious lesions of the gastro-intestinal tract may take place.

The two extremities of the digestive canal which come within our observation are the subject of syphilitic disease, of ulceration, cicatrization and the formation of fibrous tissue which result in serious strictures. Though attempts have been made to explain the existence of stricture of the rectum as simply an extension of the external ulcerations of primary syphilis, or pseudo syphilis, it is to-day fully established as one of the results of the constitutional infection.

Stricture of the œsophagus is equally well recognized as an occasional result of syphilis.

Post-mortem examinations of cases of stricture of

[1] Read before the Congress of American Physicians and Surgeons, Washington, September 23, 1891.

the rectum have occasionally established the fact of ulcers higher up in the bowels.

Mr. Holmes Coote [4] described a stricture of the rectum and the cicatrix of an ulcer above it resembling the cicatrix of a phagedenic ulcer as seen upon the external integuments, and he quotes a similar case of M. Gosselin.

In *The Medical Times and Gazette*, of March, 18, 1865, vol. I, p. 280, is found a clinical lecture of Mr. Paget's in which he describes a case of syphilitic disease of the rectum and colon. This occurred in a patient who, for seven years, had been afflicted with syphilis, and had been a patient at various hospitals. At her death was found a stricture of the rectum. Above the stricture, and continuous with it, were a series of ulcerations irregularly circular, which Mr. Paget believed to be syphilitic.

Dr. Samuel Wilks, in an article on "The Syphilitic Affections of the Internal Organs," [5] speaks of "patients, the subjects of syphilis, who had ulceration of the bowels, but whether dependent on the virus must be received with hesitation." He gives three cases of ulceration and stricture of the rectum as the only cases which he can positively connect with syphilis. In the third case cicatrices of old ulcers were found in the sigmoid flexure, and at its lower part it was much constricted.

As one of the possible causes of disease at the ileo-cæcal valve, syphilis must be given a certain amount of consideration in the diagnosis of troubles at that quarter, one of the spots of the human frame demanding a large amount of consideration at the surgeon's hands at the present time.

A case is given by Fenwick [6] of stricture at the ileo-cæcal valve due, in his belief, to syphilis, and he quotes another case from Bartels. In Fenwick's case, the patient suffered with the ordinary symptoms of intestinal obstruction. Colotomy was done, and the opening extended to the small bowel with great temporary relief. In this case there was thickening and ulceration of the mucous membrane at the lower part of the ilium in addition to the stricture of the valve. This man had suffered from syphilis, and had an ulcer of the leg, apparently syphilitic, at the time of his admission.

In the case recorded by Bartels, there was found after death, contraction of the ileo-cæcal valve, and extensive ulcerations of the cæcum and small intestines, and also indurations in the lungs, which were considered as decidedly syphilitic.

In regard to these cases, Dr. Fenwick says: "I am fully convinced that syphilis frequently attacks the mucous membrane of the digestive tract, for I have seen most obstinate cases of gastric ulceration and of dyspepsia following syphilis, which have quickly yielded to the use of iodide of potash, and other remedies of a similar character."

I should hardly have dared to detain you with this recitation of facts known to most or all of you, had not I found a striking confirmation of my suspicions that syphilitic disease of the gastro-intestinal tract is more frequent than recorded diagnosis would lead us to suppose. In looking over the autopsy records of the Boston City Hospital for a purpose to be mentioned later, I have found nineteen cases in which the pathologist has made the diagnosis of syphilis with more or less certainty. It was a surprise to find that of that number, there was one case of ulceration of the pharynx, two cases of stricture of the rectum, and in addition — and these are the cases that particularly claim attention — one case in which the mucous membrane of the stomach over the cardiac region was completely eroded; one case in which there were in the duodenum several irregular losses of substance, with elevated edges and hæmorrhagic bases; one case in which there were syphilitic ulcerations and stricture of the large intestine.

These cases are too few to prove anything, but it certainly is worthy of remark that so large a proportion of cases, six out of nineteen, showed signs of trouble with the gastro-intestinal tract. I do not wish to emphasize too much these cases. The only inference I care to draw is to the effect that gastro-intestinal syphilis presents a field for study.

In 1861, in the first edition of that admirable book which has done so much to teach American physicians something about syphilis, Bumstead wrote of the manifestations of syphilis in the brain as follows: "Syphilitic affections of the nervous system present no pathognomonic symptoms by which their specific character may be recognized; and, except in those instances in which manifest lesions of the bones of the skull, face or spine clearly indicate the etiology of the disease, the diagnosis can only be established by the history of the case, the concomitant symptoms and the effect of treatment." [7] The development of our knowledge of nervous syphilis during the thirty years succeeding is one of the very encouraging facts in the outlook for the future. I believe the next thirty years will add an equal amount to our knowledge of syphilis in other directions.

Of disease of the nervous system there is little I can say, save that a large field lies practically unexplored in congenital syphilis. To be sure, we know that nerve degenerations, such as succeed acquired syphilis in the adult, are met with in the subjects of inherited disease, but the recorded cases are few and the diagnosis is obscure.

I must confess that I have felt some hesitation in accepting the general opinion that our idiots and congenital epileptics are seldom syphilitic, but such investigations as I have made tend to confirm the existing opinion. I have been permitted to examine many cases of nervous disease of unknown or doubtful origin, and have seldom found in the child itself conclusive evidence of syphilitic taint, though I have found several children that awakened suspicion. The opportunity for clinical investigation is here very great, but it will require the most painstaking study of a long series of patients in connection with their family history.

A question of interest that arises in connection with the diagnosis of late lesions is as to the amount of influence a negative history should have in a doubtful case. In other words, how far should the failure to elicit a history of previous syphilis influence the diagnosis of a present lesion which may possibly be a late manifestation? Of course, there are cases where the invalid prefers to die rather than admit a previously immoral life, although the position of the physician makes a very great difference in the frankness of the patient. Patients who deliberately lie about their antecedents, are comparatively seldom seen by physi-

[4] The Medical Times and Gazette, 1865, vol. I, p. 82.
[5] Guy's Hospital Reports, 1863.
[6] Obscure Diseases, pp. 39, 43.
[7] Bumstead, first edition, 1861, p. 647.

cians who devote special attention to syphilis. The following incident will illustrate the discrimination occasionally exercised by patients. A woman who had had syphilis called on her old doctor whom she had not seen for some time, with a story of certain ailments and the question whether they could be syphilitic. She had already consulted the doctor whom she considered her family adviser, and he had asked her a series of questions intended to draw out a history of syphilis. The woman said "I have had all the symptoms he asked about, and I saw what he was after, so I promptly said no to all his questions and came straight to you." But the amount of concealed syphilis, the syphilis which is unknown as such to its victim, must be very large. Fournier has published some figures from his private practice, which show that among his female syphilitic patients five and one-half per cent. are cases of non-venereal syphilis, and the non-venereal cases and the women infected by their husbands, together make a total of nearly twenty per cent.

During the years 1888 and 1889 the percentage of syphilis insontium reported in Denmark was 4.7 per cent. of the total number of cases. With so much syphilis innocently acquired, it does not require a great stretch of the imagination to picture other cases which have been so slightly marked as not to attract attention at all.

Dr. Gowers, in his Lettsomian lectures on syphilis and the nervous system, quotes from Dr. Radcliffe Crocker. Dr. Crocker ascertained from his records at the University College Hospital the proportion of cases of tertiary skin eruptions in which there was no history of a chancre. He reported 56 cases of undoubted late syphilitic eruptions, cases that are consecutive and are unselected, and in no less than eleven of these the occurrence of any chancre was unknown. This is a proportion of 20 per cent. "It cannot be doubted, moreover, that besides such cases there must be many more who have no late symptoms whatever to reveal the disease." If 20 per cent. of undoubted syphilodermata of late character deny all knowledge of infection, it does not seem so strange that a large proportion of other late cases should be ignorant of the origin of the disease, and especially is this true of hereditary cases where the 20 per cent. of ignorance of the parents must be augmented by the total ignorance of the child in regard to his antecedents. The value of the antecedent history as an aid to diagnosis seemed worthy of further study, and to test its value I have compared the clinical history with post-mortem records in such cases as I could find of a post-mortem diagnosis of syphilis. For this purpose I have searched the autopsy records of the Boston City Hospital for cases in which the pathologist has committed himself to a diagnosis of syphilis.

The first fact apparent from the search is that the various gentlemen who have served as pathologists have been exceedingly conservative in positively expressing an opinion as to the existence of syphilis. It is the habit of the pathologist to complete his record by a pathological diagnosis, in which he enumerates the various lesions or points of interest in the different organs. In carefully looking over these records, I find but nineteen cases in which the diagnosis of syphilis has been made. Other cases there are in which, from reading the records, the diagnosis might have been made with great probability, but my studies have been confined to the cases in which the pathologist has used the words syphilis or gumma. Even in these nineteen cases the diagnosis has not always been unreserved. In only nine cases is the diagnosis absolute, including two cases in which the disease was recent and its manifestations evident on the skin. Examinations of the cases of probable diagnosis showed that the probability was so great that it was much nearer the truth to use them than to discard them, as the word "probable," or the interrogation point which modified the diagnosis, often expressed a doubt as to whether the *particular lesion* was syphilitic, rather than a doubt as to the syphilis of the *subject*.

Of the whole nineteen cases, two were recent cases, and ought not to be considered here, leaving seventeen cases in which old syphilis was recognized. In two of these cases the clinical history shows that the patients were unconscious at the time of their admission to the hospital, and, consequently, unable to give any history. This leaves us fifteen cases for consideration. But out of these fifteen cases, in three the clinical record is defective in that syphilis is not mentioned, so that there are only twelve cases in which we have an antecedent history as regards syphilis. Of these twelve cases three absolutely denied syphilis, one denied syphilis, but after questioning said he had a sore on his genitals at the age of six, but nothing since. Four admit chancre, or chancre and bubo. *Four* only admit syphilis as such. Of course, these cases are few in number, but the fact of a *post-mortem* diagnosis gives them a greater value than would belong to the same number of cases without autopsy.

It is possible that the indiscriminate administration of mercury does something to confuse the early history. Whether the early administration of mercury will entirely suppress the earliest appearances of syphilis or not, few would dare to say definitely, but certainly it may have a marked effect in that direction.

To take an example of the class of cases to which I refer, a young man applied for an opinion on the following case:

Six months previous after repeated exposures he had several little sores. They were pronounced to be soft chancres by the physician whom he consulted, and were destroyed with caustic, but internal medication was given and continued, which consisted for part of the time of mercury and potassic iodide. Lately, the patient discovered a little blister on the spot of one of the supposed soft sores, which came without exposure, and which he has burned. There is a gland or two in each groin, but none elsewhere. There are a few acneform lesions on the forehead, which may be syphilitic, but they are not characteristic, and as the patient has always had more or less acne, and has now on the back several scars, and some active papules, it is equally probable that they are the result of the iodide. The spot of the recurrent sore is somewhat hardened, but perhaps no more than the caustic might explain. In that case it was impossible to give a dogmatic opinion. The syphilitic infection is doubtful.

What sort of a history can that man give when the question of tertiaries is discussed? And how easy it would have been for him to overlook the whole affair.

Every prognosis must be a matter of special consideration, just as diagnosis must be. The scars upon the skin, and the cicatrices in the liver tell us not only of the existence of syphilis, but they also tell us that the proper elements of a part have been destroyed, and their place supplied by cicatricial tissue.

Prognosis must always take into account that fact, which is already emphasized by the neurologists, but ignored, to a certain extent at least, by the rest of us.

There is something to be deduced in the matter of treatment, from what has been said in the matter of prognosis. Distinction must be made between the syphilitic lesions themselves and their effects. Anti-syphilitic treatment has great power over the active processes of late lesions, but it is powerless to restore the tissue already destroyed, or to diminish the cicatrix already formed. The function of mercury and the iodides ceases with their control over the active process, and the resorption of the specific elements. Surgical operations may occasionally be called in to rectify, or to compensate for the injury caused by loss of tissue and consequent contractions. Strictures of the œsophagus and of the rectum, fully formed by cicatrization, or the formation of fibrous tissue, as well as advanced aneurism, are among the surgical lesions of syphilis that we cannot expect to cure by medication.

Syphilitic cicatrices are no more curable than other cicatrices, whatever may be their origin. If the disease is recognized at its first period, before the active syphilitic process is terminated, or possibly before the cicatrix itself is solid, one may *hope* for a recovery from antisyphilitic remedies, but it is extremely important to recognize this necessary limitation.

The attempt to destroy syphilitic growths, or to heal syphilitic ulcerations by the application of caustics is, I believe, not uncommon; but in general it may be said that to attempt to destroy by caustics without internal medication, a syphilitic tertiary lesion, is as futile as common. Valuable as caustics are in some cases as adjuvants to proper treatment, used alone they seem to me to stimulate the destructive process rather than control it.

Even when the late forms of syphilis are recognized as such in children, the value of antisyphilitic treatment is not fully appreciated. The late lesions of inherited syphilis are as readily controlled by the antisyphilitics as those of acquired disease. The amount of the iodides that may be administered is very large in most cases.

What is the value of treatment in establishing a retrospective diagnosis? We have seen that certain limits must be set to the powers of medicine. It must also be admitted that mercury and the iodides have certain power over tuberculosis, and perhaps new growths. *A priori*, it seems just as proper to expect mercurials to act favorably on tuberculous lesions as on syphilitic, and I believe some of our closest students of external tuberculosis consider that mercury does act favorably on tuberculous lesions, but still recovery of a doubtful lesion under mercury and iodide increases very decidedly the presumption of its syphilitic origin.

As between external tuberculosis and external syphilis, the therapeutic test is of less value in my opinion than between syphilis and other diseases. It seems to me improper in a doubtful case to hang the diagnosis absolutely on the therapeutic test.

I recognize that what precedes is fragmentary, and I fear most or all of it is trite. It is difficult for a man who occupies himself with a subject for a long time to know whether any part of his knowledge may be novel to his neighbors, or how far he may consider that his own experience is the common experience of all. In what I have said I have tried to distinguish my individual opinion by using the personal pronoun, that no one might imagine that I was enunciating established laws when I was only giving the inference drawn from my own limited experience. I am painfully aware that the subject has only been touched in a few only of its important features.

In conclusion I wish to say, that the study of syphilitic phenomena is a necessity of medical progress. The possibility of syphilis renders uncertain the diagnosis of tuberculosis and cancer, and other malignant forms of disease, and thus renders negative therapeutic and pathological investigations. We need the most careful clinical studies; we need hospitals specially devoted to syphilis; we need to make its study obligatory.

A CONTRIBUTION FROM BRAIN SURGERY TO THE STUDY OF THE LOCALIZATION OF THE SENSORY CENTRES IN THE CEREBRAL CORTEX.[1]

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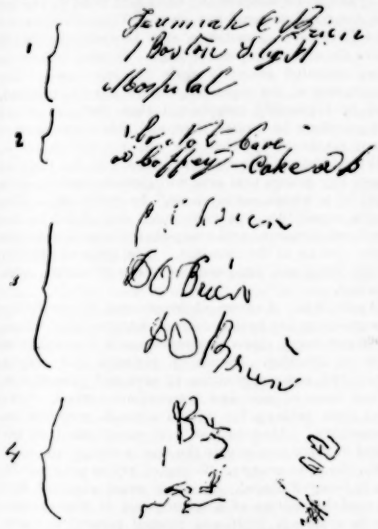
THE question of the localization of the sensory centres in the cerebral cortex is still an open one. One set of observers place them in the central region about the fissure of Rolando, another in the limbic lobe. It is not my purpose in the present paper to discuss the question either from the standpoint of physiological experiment or from a summing up of clinical observations. The case I have to report seems, however, to be the most exact observation yet made upon the human subject, and to afford strong evidence in behalf of the hypothesis that the sensory centres are in the Rolandic region.

Jeremiah O'Brien, forty-eight, single, a native of New Jersey, a laborer, presented himself at the Boston City Hospital, on March 24, 1890, with the following history: He was formerly well and vigorous. He had indulged somewhat in alcohol, but he denies any venereal disease. At the battle of Chantilly, September 1, 1862, he received a bullet-wound in the head. He was carried to a hospital in Alexandria, where he remained six months. When he left his wound was not healed, and it constantly discharged. Before his injury he was mentally sound, since then his friends say that he has been peculiar and irresponsible. In July, 1863, in New York he got drunk, and, on becoming sober, found that he had enlisted in the navy. He served on the Mississippi as store-keeper on a gun-boat, then joined a fleet preparing for Mexico, and finally took service on a Peruvian iron-clad, where he did some sort of clerical work, keeping records for two years. He wandered about the world, as sailor or stowaway, and finally, in 1872, returned to Boston. For some time about this period he was very dull and did little. Since 1862 there has been a progressive decline in his mental powers, and he was for a time at the Westborough Asylum. His memory has grown very poor, and he admits that he cannot give very accurate statements as to his condition. After his wound he had severe pains in the head occasionally, perhaps once in three or four years, usually starting from the site of the wound. For eight or nine months, or, as he said later, for two years, he has had attacks, in

[1] Read before the American Neurological Association, June, 1890.

which he fell down, his limbs worked, and he became unconscious, remaining unconscious or ignorant of his surroundings for four weeks. He has had four or five of these attacks, but little could be learned in regard to them. His chief complaint now is of these attacks and of headache; he also thinks his mind is weak, and his memory poor, and he has much trouble in talking; the memory at times is wholly gone. He can think of what he wants to say, but cannot say it. His appetite is poor, and he is somewhat costive. He complains also of some soreness of the scalp and growths on the scalp, which have lasted for about four months.



1. Writing from dictation, March 26, 1890.
2. Writing from copy, March 26, 1890.
3. Attempt to write name, April 18, 1890.
4. Attempt to write name, May 30, 1890.

Present condition, well developed and nourished. He has a dull, rather demented look, resembling that of a general paralytic. His comprehension seems dull, and his mental processes are all slow. His speech is thick and slurred, and he often hesitates for a word, becoming somewhat irritated and thinking it strange that he cannot say what he wants to. The words he hesitates on are usually nouns. He says this hesitancy for a word occurs also on writing. He can read aloud, repeat what is said, write independently from copy or from dictation, but all the processes are slow, clumsy and inaccurate. The writing seems poor for a man who has kept records for two years. The first example, written March 26th, represents an attempt to write his name and "Boston City Hospital"; the second, to copy from a printed list "Do not give tea or coffee, cake or candy." There is a scar running longitudinally over the left parietal eminence, about two inches from the median line, and crossing the supposed position of the fissure of Rolando. Beneath this the bone seems depressed; and the scar seems in part adherent. The right pupil is larger than the left, both reacting to light and accommodation. Examination of the eyes reveals well-marked myopia in the left eye, but no other anomalies. There is much fibrillary tremor of the lips, face and tongue, and some tremor of the hands. The grasps are of fair strength, and alike on the two sides. All movements are performed a little clumsily, but with good strength and tolerable co-ordination. The sensibility was tested by myself and by Dr. J. A. Jeffries, to whom I am indebted for various observations during the progress of the case, and was found to be unimpaired. His responses, like all other mental processes, were a little slow, but they were accurate. Tests were made of the sensibility to touch, position, motion, location, pain, weight, pressure, heat and cold. The knee-jerks were somewhat exaggerated. The gait was rather slow and shuffling. The chest and abdomen showed nothing remarkable. The urine contained a trace of albumen and an occasional hyaline cast.

The diagnosis was made of a slowly progressive cortical degeneration of traumatic origin. Considering the history of headache starting from the seat of the wound, it seemed possible to obtain some relief for that by trephining. In the early stages of general paralysis, Claye Shaw [2] has trephined, and claims that there is an arrest of symptoms. Since then the operation has been done once or twice by others, but without much benefit. Considering how common remissions are in this disease, it seems at least to be too soon to claim that such trephining can be of any real benefit. In a case, however, of nearly thirty years' standing no improvement was to be thought of; the only hope was that the headache and perhaps the convulsive attacks might be relieved. He was accordingly admitted to the service of Dr. Post, at the City Hospital, who has kindly placed the further records of the case at my disposal, and permitted me to observe the patient.

"Etherized April 11th. The head was shaved, scrubbed with ether and corrosive sublimate solution (1 to 3000). An elastic tourniquet was put about the head from the brow to the occiput. One of the local swellings was incised and proved to be a wen. A semicircular cut with a radius of an inch and a quarter was made over the left parietal region with the concavity downwards. An old cicatrix was found in the flap. The skin was incised to the bone and reflected with the periosteum. There was considerable bleeding from the vessels of the scalp, which were tied before proceeding. The bone was smooth with a slight grooved depression under the cicatrix. A one-inch trephine was applied at a point corresponding to the most prominent part of the superficial cicatrix, and a button removed. There was considerable hæmorrhage from the diploë, and still more on removing the button, the blood coming from a superficial vessel in the cortex wounded by the trephine, which went through the dura. The dura was divided through the centre, and reflected back, and the bleeding point was tied. The dura was slightly thickened, and on turning it back the cortex beneath was found congested and slightly yellower than normal, one point, the size of a pea, being decidedly yellow. This was excised, and a piece of the bone removed. The excised portion showed some increase in the number of blood-vessels, and a thickening of the vessel walls. The nerve fibres and ganglion cells are not materially affected. It being thought advisable to explore the dura farther forwards, the incision was enlarged. Rongeur forceps having failed,

[2] British Medical Journal, November 16, 1889.

the bone being hard, a second button was removed just anterior to the first. The dura appeared healthy below this, and the brain seemed normal. The sharp edges of the bone were removed, the wound was irrigated with hot boracic acid solution (1 to 25), and partially closed with interrupted silk sutures. The other wens were removed by transfixion and enucleation. A baked dressing was applied. The operation lasted an hour and a half, and at its close the patient's condition was good, the pulse 60 and of good strength, and the respiration regular."

The circle represents the trephine opening; the line crossing it, the line of the fissure of Rolando, as determined by the cyrtometer; the dot, the situation of the lesion of the cortex.

The point of the cortex from which the hæmorrhage came seemed to be on the border of a fissure which ran in the general direction of the fissure of Rolando. Measurements made afterwards with a cyrtometer showed that this was a little back of the position of the fissure of Rolando as thus determined. The effort to secure the bleeding point caused some laceration of the cortex just at the posterior edge of this fissure, and the yellow spot removed was just back of the lacerated portion. The whole portion of cortex injured was not over a centimetre and a half in diameter, and the injury did not extend deeper than three millimetres. Even if the fissure was not the fissure of Rolando, the injured portion could not have been more than half an inch behind it, which ought still to involve the ascending parietal convolution. The injured point, furthermore, was about two inches from the median line, a little below the superior frontal sulcus, as marked out by Reid's method, and opposite the second frontal convolution.

"Afternoon. Patient recovered well from ether. Complains of considerable pain at the seat of operation. Irregular, involuntary movements of right arm, and queer sensations in it. It took some arguing to make him understand it was his hand. If told to move his arm he can do so, but involuntary working of the fingers persists. Sensation in arm impaired. Tongue protruded to left. Right pupil larger than left.

"April 12th. Quite delirious last night. Condition in morning very good. Arm feels better, but involuntary movements continue.

"April 14th. Feels better. General condition good. Pulse regular and strong. More control of arm, but twitching of the fingers is still present, although less marked. This morning localized œdema of right upper lid without apparent cause. Dressing loosened."

On the 13th and 14th I visited him and made examinations. There was a loss of power to perform highly purposive actions with the right hand. A command to open the hand would be met with, "I can't do it"; and as he watched the hand and tried to execute the command it would not open. When his attention was directed to something else, however, he would move the arm and open the hand. Similar commands were executed promptly with the left hand. The movements of the right hand were not co-ordinated, and he repeatedly complained that the arm would not go where he wanted it to, and that it would move about involuntarily when he was not looking at it. "When I'm talking to that fellow (on his left), or when I'm asleep, that arm will come up and hit me a devil of a whack on my nose," he would say. The tactile sensibility was very much diminished in the hand and forearm, and somewhat diminished in the upper arm up to the shoulder. The sense of position of the hand and arm, and the sense of motion, were also lost.

April 16th. A more elaborate test of sensibility was made to-day by Dr. Jeffries, who reports: "Loss of contact below elbow to simple touch, diminished as high as shoulder. Sense of pressure and weight diminished, sense of position of arm and joint-motion absent, sense of pain and temperature normal. Constant light rubbing for fifteen seconds perceived as 'something.' Motions not well co-ordinated or adjusted in rate: one minute the arm is strong, the next weak, the next crampy. Grasp of nouns poor, partly due to being flustered. Said he could not read, but did read the address of a letter; said it was curious that he could not do it, and seemed pleased to know that he had. Wrote 'Boston' well, then had difficulty, chiefly muscular. When asked what four and five made, said at once 'nine,' then asked 'does it?' The records add "Seems better; can talk better. Says pain he now has in head, at seat of operation, is different from what he has been having, and is not so uncomfortable. Can control hand better, but still has some involuntary motion."

April 18th. He is able to talk fairly well, without hesitating for a word, and seems brighter. Before the operation he had a dull pain across the forehead, but "all the things he used to have, it seems as if he didn't have now." Tactile sensibility is still diminished, but it is better than on the 14th. Sensibility to pain, and temperature good. Can tell that elbow and wrist are moved, but he is still doubtful about movements of the fingers. Sense of position much better. He can move the arm quite well, and the involuntary movements have largely ceased. He tries to write, but has difficulty in keeping the pencil on the paper; it slides up through his fingers. (See Nos. 3 and 4.)

"April 20th. Wound dressed; perfect first intention. Gauze red and dry, no discharge. Stitches removed. Some swelling where one of the wens was removed, but no pus. Irrigation with corrosive sublimate (1 to 3000) and corrosive dressing applied.

"April 23d. Better. Better control of arm." Drs. Jeffries and Prince saw true athetosis of the arm, which I have not seen.

"April 30th. General condition better. Can control arm better. Wound healed. He still has trouble in speech, which he gets around in this way: 'Last night my hand was cold two or three times. It got cold at 11, and then at — you see, I can't say what I want to — 7, 8, 9, 10, 11, 12, 1, 2, yes, 2 o'clock, that was when it got warm again.' Strength of arm much improved."

May 28th. For the last four weeks the patient has been in bed most of the time, and has been growing more inert. He is easily flustered and can be laughed out of any statement. He will often answer correctly, and then be uncertain whether his answer is correct or not. He has regained much power in his hand, and constantly practices to see what he can do. A further test of sensibility was made by Dr. Jeffries. "Sense of contact diminished, most marked in the hand, especially on its ulnar border, but it becomes normal or nearly so, before reaching the elbow. Sense of pain and temperature normal. Sense of pressure and joint motion and position diminished. Some trace of ataxia. Sense of weight probably impaired, but it could not be tested accurately. Fibrillary twitching of muscles of ulnar side of right hand."

May 30th. To-day I made a more extensive observation. He has been in bed, not from his own desire, but from a misunderstanding, and he is anxious to be up and about. Mentally his condition seems about the same, but it is very variable. He talks with less hesitation. Simple calculations, the addition of two figures, are not well performed. He professes himself unable to read, but spells out some letters, and occasionally will read a whole word, for example, "Massachusetts." An attempt to write proves a failure; when asked to write his name he puts down B, when told to make a J, he asks "how do you spell it?" Much of the trouble seems muscular. When asked to add 5 and 6 he says 8, then hesitates, thinks, counts, and says 11; when asked to add 3 and 4 he gives it up. He complains of pain about the seat of the wens. His motor power varies from time to time. His grasp is good, but there is a good deal of inco-ordination, tremor of both arms, and an occasional twitch in the right arm. When he tries to write there is a tonic spasm of the hand, the fingers flexed at the metacarpophalangeal joint and extended at the other joints, the thumbs strongly adducted and extended. The elbow jerks are alike. There is also at times some tonic spasm of the arm. The sensibility to touch, position and joint-motion are much impaired, as on the 28th. The temperature chart shows no rise since the operation.

To sum up the case, therefore, we have a man with normal sensibility, and slightly impaired motor power, who has a lesion of the middle third of the left ascending parietal convolution. This is almost immediately followed by a slight and temporary impairment of strictly purposive movement, by a loss of sensibility to touch, pressure, motion and position, and by motor inco-ordination. Sensibility to pain and temperature remain unaffected throughout. The sensory disturbances and inco-ordination persist seven weeks after the operation.

This seems to prove as conclusively as one case can that the sensory centres are in the central convolutions. It is, of course the most utter begging of the question to assume that there is a coexistent lesion of the limbic lobe, either from a lesion induced by the operation or from an extension of an inflammatory process from the wound — no signs of inflammation being present there. While I do not accept fully Munk's hypothesis that the functions of the central region are purely sensory, nevertheless the symptom-complex presented in this case is in singular accord with the results of Munk's experiments in this region.

The symptom-complex observed in many cases of syringo-myelia points to the belief that the tracts for the sensations of pain and temperature are separate from the other sensory tracts. The fact that these sensations were unimpaired in his case, leads us to ascribe to them also independent centres in the coxtex. As a therapeutic measure the operation must be regarded as a failure.

On the 14th of May, 1891, I saw him again in consultation with Dr. Alfred Worcester, of Waltham. During the summer he had been fairly well, and he was able to go about and to walk quite a distance. In the autumn he had another convulsive seizure, and since then there had been a marked mental deterioration, and a return of the convulsions. I found him sitting up in bed, but it was impossible to get him to answer questions intelligently. The speech was very slow. He remembered the hospital and my name, but he entirely failed to recognize me. He could still remember certain events of his life, and he retained a fondness for tobacco. He kept saying "I would like to see Dr. Knapp," but he could not comprehend when told that I was present. Sensibility to pain was evidently present in the right arm, but his mental dulness was so great that it was impossible to test the tactile sensibility.

Clinical Department.

GYNECOLOGICAL CASES AT THE ST. ELIZABETH'S HOSPITAL.

SERVICE OF F. W. JOHNSON, M.D.

REPORTED BY DR. E. H. ROSS, *House-Officer.*

(Concluded from No. 16, page 406.)

TWO CASES OF CARCINOMA UTERI.

Case I. M. A., married, thirty-five years of age, entered the hospital December 1st. Has had four children. Two years ago she was examined in the Out-patient Department, and there was no evidence of cancer at that time, but extensive bilateral laceration of the cervix, with hypertrophy of both lips was found. Last fall she was seen at the Carney Hospital Out-patient Department, and the vagina was found filled with an epitheliomatous mass. She had had several severe hæmorrhages, and entered St. Elizabeth's Hospital December 1st, anæmic and weak from loss of blood.

December 6th. As much of the disease as possible was scraped and cut away, the bleeding controlled by the cautery, and the cavity made by the operation was packed with iron cotton.

December 16th. The cavity was packed with cotton wet with a solution of zinc chloride (equal parts by weight of zinc and water). Severe pain followed the application of the zinc, requiring morphine and papine for its relief. An ugly looking hole was left after separation of the slough.

January 24th. Discharged at own request. As far as could be seen, the disease had not returned.

Case II. M. B. W., married, fifty-nine years of age, entered the hospital January 11th. A sister, brother, and one nephew died of cancer. Mother of five children; last one born at the age of thirty-nine. Menopause at fifty. Four years ago had a slight hæmorrhage from the vagina, also two or three months later, and occasionally since. Has been growing fleshy during the past two years. Is excessively nervous. Appetite poor. When seen by Dr. Johnson, January, 1890, the disease had already invaded the vaginal walls, and there was reason to suspect that it had extended into the base of the broad ligament on the left side.

In January, 1890, curetting was thoroughly done, and the cautery applied. Again, in September, 1890, the same operation was done. From this she gained in every way, but in December it was found that the disease had returned, at least in one spot.

January 12th. Operation. Curette and cautery were used. Return of disease found to be slight. In seven days the cavity was packed with cotton wrung out of a solution (equal parts by weight) of zinc chloride and water. The caustic caused intense pain, morphia controlling it only in part. A large and deep slough separated.

February 5th. Discharged. Upper part of vagina was almost obliterated by the contraction of cicatricial tissue.

Fibroid Tumor: Menorrhagia and Dysmenorrhœa: Electrolysis.

M. A. S., single, thirty-six, entered hospital December 22d. Good family history. Menstruates regularly every four weeks; flows six to seven days; saturates fifteen to twenty napkins. Perfectly well during intra-menstrual periods, but when unwell is obliged to give up her occupation as schoolteacher for three days, on account of severe dysmenorrhœa and weakness from loss of blood. Examined under ether by Drs. Johnson and Conant. A symmetrical, non-fluctuating, hard tumor was found in the abdomen, extending as high as the umbilicus, and bulging into the anterior fornix of the vagina. The sound passed seven inches into the cavity of the uterus without causing any hæmorrhage. A diagnosis of fibroid was made.

December 29th. Dr. Conant assisting, the uterus was thoroughly curetted.

January 12th. Discharged.

The first menstrual period was passed without any pain and with the loss of but little blood, but the second menstrual period was by far the worst she had had for years. The flowing was excessive and the pain unusually severe. After the next menstrual period, which was accompanied with the usual amount of pain and loss of blood, she entered the hospital and electrolysis was done. One needle was passed into the tumor just below the umbilicus and to the left of the median line, and the other was passed through the cervical canal and then into the tumor. The full strength of an eighteen-cell McIntosh galvanic battery with fresh fluid was allowed to pass through the tumor for fifteen minutes. There was no reaction, and in twelve days electrolysis was repeated. The result will be reported when sufficient time has elapsed to show what effect, if any, the electricity exerts on the tumor. Menstruation returned at the regular time. Flowed three days. Little pain for one hour during the first day. Lost about one-third the usual amount of blood.

One Case of Malignant Adenoma.

E. J. H., married, no children, thirty-nine years of age, entered the hospital December 31st. Phthisical family history. Grandfather died of cancer. Grandmother died of "bone tumor of the face." Four years ago began to suffer from menorrhagia, which has been steadily increasing. Between menstrual periods has had for months an almost constant vaginal discharge of a clear, watery fluid resembling serum. Menstruation began at thirteen. For the last three years has been unwell every three weeks. Flows two to three weeks; saturates thirty to forty napkins; severe pain in right ovarian region first three to four days. Very anæmic from loss of blood and serum. Appetite and digestion good. Last November uterus was curetted without ether, and a small amount of tissue removed. This was sent to Dr. W. F. Whitney, who made a diagnosis of probable malignant adenoma.

January 1st. Under ether, a thorough examination was made. Extending from the uterus on the right and reaching to the ilium, a mass as large as the fist was discovered. This was apparently an outgrowth of the uterus. It, with the uterus, which was right laterally retroverted, was immovable. This put vaginal hysterectomy out of the question. The uterus was curetted with sharp curettes and pure nitric acid applied inside the body, care being taken to avoid the cervical canal.

January 10th. Discharged.

In March she again entered the hospital. There had been no return of the serous discharge except for a day or two before and one day after menstruation. Menstruation occurred four weeks after the operation; flowed four days; used thirteen napkins; had more than the usual pain in right side. Menstruation again occurred in four weeks; flowed five days; soaked twenty napkins. Had but little pain. Under ether the uterus was again curetted with sharp curettes, and nitric acid applied to endometrium and cervical canal.

Dr. W. F. Whitney reported as follows: "Examination of the scrapings showed numerous velvety scrapings, not very thick and with no very large or polypoid looking masses. Microscopic examination showed large tubular glands with a relatively large amount of intertubular tissue composed of large, somewhat spindle-shaped cells. This looks like simple hyperplastic endometritis."

Bilateral Laceration of the Cervix: Malignant Adenoma. Operation on the Cervix: Uterus Curetted.

M. A. M., married, thirty-eight years of age, entered the hospital January 27th. Has had ten children and one miscarriage. First labor was instrumental. Long, tedious getting up after last confinement, which occurred in December, 1889. Menstruation began at twelve. Since marriage has been unwell every twenty-one to thirty-one days; flows four to five days; soaks ten to fifteen napkins. Constipation. Painful micturition. Constant leucorrhœa. Examination showed ruptured perineum, bilateral laceration of the cervix, with ectropion and erosion, chronic endometritis, and retroversion. Packing was used until the uterus was in good position.

February 9th. The uterus was curetted and an

operation done to overcome the rolling out of the cervical mucous membrane. Dr. Conant assisted. When etherized an examination revealed a small cyst of the left ovary.

Dr. Whitney's report shows the nature of the disease existing inside the uterus. "The specimen from the case of Mrs. M. consisted of numerous relatively thin velvety pieces with a smooth surface. Microscopic examination showed the thickness of these to be made up of large tubular glands with but very little interglandular substance. From the structure it is rather to be classed with the malignant adenomas than with simple hyperplasias, while on the other hand the general look of the fragments is more suggestive of hyperplasia. My own feeling is that it will have a relatively rapid recurrence."

February 12th. Discharged. Operation on cervix a success.

May, 1891. Examination showed that she was pregnant.

IMPERFORATE HYMEN WITH RETAINED MENSTRUAL FLUID.

M. K., single, sixteen years of age, entered the hospital January 29th. This patient was kindly sent to me by Dr. G. E. Thompson, and it was the first one of the kind that I had seen. She had had more or less headache every day for two years. Two weeks ago first had difficulty in emptying the bladder and for a few days before entering the hospital it was necessary to use a catheter. Two weeks ago first noticed a swelling at the vulva.

January 30th. Drs. Thompson, Kingman, and Conant present, an examination showed a bulging of a purplish color extending from the meatus urinarius to the anus. The hymen, thick and tense, was imperforate. An opening was made directly through the hymen with the small tip of the Paquelin cautery. A pint of thick chocolate-colored fluid having the odor of caramel slowly escaped. The opening was then enlarged upwards and downwards and to the right and left by the cautery. The vagina was thoroughly douched with a 1 to 5000 solution of bichloride and the finger passed in. The vagina was much dilated and the mucous membrane was in large patches devoid of epithelium. Cervix and uterus were pushed backwards and upwards. Os patulous, easily admitting index finger. Cavity of uterus dilated to the size of a hen's egg. Uterus and vagina were then washed out with a 1 to 1000 solution of bichloride. For one week the vagina was douched twice a day with a 1 to 4000 solution of bichloride as it was found that the vagina tended to close up at various points by adhesion of its walls. There was no sepsis owing to antiseptic precautions.

February 10th. Discharged.

March 16th. Examined by Drs. Johnson and Thompson. The vagina was free from adhesions and the hymen admitted without pain the index finger.

COMPLETE RUPTURE OF THE PERINEUM. PERFECT RESULT WITH LAWSON TAIT'S OPERATION.

C. K., married, forty-nine years of age, entered the hospital February 16th. Has had twelve children and three abortions. Was torn into the rectum twelve years ago during labor. Has had three children since, the last one seven years ago. No control over rectum for twelve years. Menstruates every three to four months. Diagnosis: Complete rupture of the perineum extending three-quarters of an inch up the rectum.

February 23d. Tait's flap operation. Drs. Conant and Twombly assisted. Silkworm gut was used for sutures. Union was perfect when the sutures were removed on the ninth day.

March 17th. Discharged, having perfect control over sphincter ani.

Medical Progress.

REPORT ON LARYNGOLOGY AND RHINOLOGY.

BY FRANKLIN H HOOPER, M.D., BOSTON.

THE RELATION OF BACTERIOLOGY TO NOSE AND THROAT DISEASES.[1]

At a meeting of the British Laryngological and Rhinological Society, held on Friday evening, March 20th, Dr. John Macintyre, of Glasgow, gave an interesting lecture, introductory to the discussion on the relation of bacteriology to the diseases of the throat and nose. In the course of his lecture Dr. Macintyre discussed the general facts concerning bacteriology, such as classification, vital phenomena, etc., and stated the arguments for and against the vitalistic theory of disease. He demonstrated a large number of specimens of well-known forms of micro-organisms under the microscope, as well as numerous micro-photographs on the screen, and made special reference to those of interest in throat and nose work. He showed several found in the mouth and nose of healthy people, which are apparently harmless, and others found in diseases where there is decomposing material such as in ozæna. He referred to the specific forms found in diseases of the lower part of the respiratory tract, as tubercle, lupus, diphtheria, pneumonia, and suppurative diseases. Lastly, he discussed the question, how protection was to be got from the diseases associated with micro-organisms, noting the result of inoculation, and criticised the theory of phagocytosis. He explained some interesting experiments now being made in Glasgow, with reference to the hypodermic injection of chemically pure carbolic acid, which bid fair to demonstrate the possibility of rendering the effects of certain pathogenetic micro-organisms inoperative within the body. In considering the possibility of rendering the tissues unsuitable for the growth of organisms after their entrance into the system, he cautioned his audience not to be carried away too hastily by Koch's or Liebreich's methods of treatment for tuberculosis.

CYST AND ABSCESS OF THE MIDDLE TURBINATED BONE.

Dr. Grenville Macdonald,[2] of London, has observed five cases of this infrequent affection. The pathological etiology of these cysts, he thinks, is simple enough. The process in all probability begins in an osteophytic periostitis, resulting in a general increase in the size of the bone in every diameter. The free margin of the bone being incurved upon itself, the extension inwards of this border, from the pathological process just mentioned, will bring it in contact, and ultimately in union, with the body of the bone. Thus a cavity may become enclosed and sealed at all points by a similar

[1] Lancet, March 28, 1891.
[2] Lancet, June 20, 1891.

process occurring at the two extremities. Adhesions in various localities are by no means uncommon in the nose, and are fully exemplified in the further history of these cysts. To express it in other words, this bone hypertrophy may result in the production of a cavity, lined with mucous membrane, and generating mucus, which from the lack of outlet gradually distends the cavity into which it is secreted. Thus are acquired the extreme thinness of the cyst walls, and the enormous size sometimes attained, with adhesions to, and distortion of, neighboring structures.

Dr. Macdonald gives the result of the microscopical examination of the cyst wall, which proves that his explanation of the origin of these neoplasms is correct; and he then describes their gross appearances, symptoms, and treatment as follows: "The cysts are found of varying size. When very large they may form adhesions to the septum, inferior turbinated body, and even the floor of the nasal fossa. They invariably produce deviation more or less pronounced of the septum to the opposite side, and sometimes induce a certain amount of flattening of the bridge of the nose from separation of the nasal bones and nasal processes of the superior maxilla. The contents of the cysts are usually mucus, with more or less polypus growth attached to the inner wall.

The symptoms differ in no way from those due to other forms of obstruction, pressure, or irritation within the nose. Thus we find the not uncommon consequence of stenosis in the form of chronic inflammation of the pharynx and larynx, and the further respiratory passages; besides which there may be various auditory troubles due to Eustachian obstruction. External disfigurements, adhesions to neighboring structures, and trigeminal neuralgia may result from pressure, and sneezing and rhinorrhœa from the irritation. In case of abscess there will be a purulent discharge. The diagnosis presents no difficulty. Whenever an osseous tumor presents itself in the middle meatus of such a size that it is obviously something further than a simple osteoptytic periostitis, whether presenting an osseous surface covered only by mucous membrane, or whether it is concealed partially or entirely by polypoid growths, the probability is strongly in favor of cyst. When, moreover, these appearances are accompanied by a purulent or fœtid discharge, one may safely surmise that he is dealing with a suppurating cyst or abscess of the middle turbinated.

The treatment is simple enough in cases where the tumor has not attained enormous dimensions. The simplest way of effecting removal is to throw a strong snare round the mass and remove as large a portion as possible. The remaining portion of the walls may afterwards be broken away with forceps. When the cyst is very large, and adhesions have formed to neighboring structures, the adhesion must be severed in the manner most easy of accomplishment, that is to say, with the knife or electric cautery. In some cases a saw might be necessary. Then, a sufficiently large hole having been made, a pair of strong forceps is introduced, and the walls torn away piecemeal.

RETRO-PHARYNGEAL ABSCESSES OF CHILDREN.

An exhaustive and interesting paper by Dr. Alexander A. Sokoloff, of Moscow,[2] is based mainly on forty cases of typical retro-pharyngeal abscess, and sixteen of retro-pharyngeal lymphadenitis, which have come under his observation in St. Olga's and St. Vladimir's Hospitals for Children, in the course of the last four years.

According to his classification, purulent inflammations in the retro-pharyngeal space, may be divided into the following groups: (1) ***Single congestive purulent gatherings*** in the retro-visceral cervical space, which arise in connection with various inflammatory processes in its vicinity (cervical phlegmon, inflammation of cervical lymphatic glands, periostites of adjacent bones, etc.). (2) ***Tubercular congestive purulent accumulations***, developing in connection with cervical spondylitis. (3) ***Proper retro-pharyngeal abscesses***, due to inflammatory processes in the space itself. The later category may be subdivided into three groups: (*a*) ***Traumatic phlegmon*** of the retro-pharyngeal cellular tissue, which is caused by a direct inroad thereinto of pathogenic microbes. (*b*) ***Metastatic Inflammation*** of the tissue, produced by the microbes penetrating through the circulation (in cases of small-pox, typhoid fever, scarlatina, etc.). (*c*) ***Suppurative retro-pharyngeal lymphadenitis***, which is induced by the microbes travelling along lymphatic vessels (and arrested in the glands), and constitutes the so-called "idiopathic" retro-pharyngeal abscess of children.

It is seen, therefore, that the author, in common with Verneuil (1842), believes that the "idiopathic" abscess forms, in reality, nothing else than an acute purulent inflammation of the lower retro-pharyngeal lymphatic glands, which are situated at the level of the second and third cervical vertebræ. In support of the pathogenetic theory, he brings forward the following facts: (1) The abscess is almost invariably accompanied by enlargement of deep lymphatic glands on the same side, or on both sides, of the neck. (2) In some cases the retro-pharyngeal suppuration is preceded by a similar process in, or at least a swelling of, the cervical glands. (3) In other cases suppuration of the retro-pharyngeal is followed or accompanied by enlargement of an analogous gland lying symmetrically on the other side of the space. (4) Occasionally, a direct observation allows us to trace an actual metamorphosis of a swollen retro-pharyngeal gland into a suppurating one. (5) The lymphadenitis invariably arises secondarily to pharyngitis of one or other variety (in other words, Dr. Sokoloff denies the existence of an "idiopathic" retro-pharyngeal abscess). (6) The disease in question occurs mainly (in seventy-five per cent. of cases) in children under one year of age, and never attacks those above four; to put it otherwise, it is observed only in patients of an age during which the glands still exist, and never affects older children in whom the organs have already undergone atrophy and disappeared.

As to the peculiar liability of early life to retro-pharyngeal abscess, it is thought to be connected with acute cervical lymphadenitis in general, which, in its turn, may be explained by "a relatively great frequency in little children of primary peripheral inflammation or traumatic lesions about the head and its cavities."

With regard to the symptomatology of retro-pharyngeal abscesses in general, and retro-pharyngeal lymphadenitis in particular, the author draws attention to the fact that disturbances of swallowing and breathing may be sometimes absent altogether, the affection running a latent course; hence a frequent digital ex-

[2] Abstract in the Journal of Laryngology and Rhinology, May, 1891, by Dr. Valerius Idelson, of Berne.

amination of the pharynx in infants is advised, more especially in those cases where there is present enlargement of deep cervical glands.

Passing to an operative treatment, Dr. Sokoloff lays down the following general rules: (1) Typical retro-pharyngeal abscesses, situated entirely in the retro-pharyngeal space, should be opened by a sufficiently large incision through the mouth. (2) Such abscesses as cannot be reached from the fauces, on account of their deep situation, should be cut into externally, through the lateral aspect of the neck, as practised by St. Germain, Bokai, Burkhardt, etc. (3) The same procedure should be also employed in cases where the abscess is spreading towards the lateral surface of the neck, having passed under the external cervical aponeurosis outwards from the vascular bundle. (4) Traumatic phlegmon of the retro-pharyngeal cellular tissue and tubercular congestive abscesses must be always opened after the external method. (5) The latter prevents wounding the tongue, as well as the penetration of pus into the respiratory tracts. Having found ordinary pharyngotomes and scalpels inconvenient for emptying retro-pharyngeal abscesses, the author has invented an instrument of his own which represents a small-sized knife with a protecting sheath. The main disadvantage of an ordinary scalpel is said to consist in the impossibility of making a sufficiently free incision, the consequences being retention of pus and the disagreeable necessity of repeating the operation, and inflicting multiple wounds of the posterior pharyngeal wall.

NASO-PHARYNGEAL CATARRH A CAUSATIVE FACTOR IN GASTRIC CATARRH.

Dr. Louis Fischer[4] is of the opinion that gastritis in adults and children, is caused very frequently by the constant swallowing of catarrhal exudations of an acute pharyngitis. In speaking of the anatomical relationship he says that when we consider the anatomical position of the pharynx, situated above and the stomach below, it is easy to understand how all exudations from the pharynx, be they mucous, muco-purulent, muco-sanguinolent, or otherwise combined, can and usually do, gravitate toward the stomach, either by involuntary or voluntary deglutition, especially at night, in the same manner as the insensible swallowing of saliva is continually carried on.

Children show the picture remarkably. They cannot hawk and spit as adults, consequently all catarrhal exudations forming or lying in the pharynx, and interfering with the natural comforts of the child, tend to produce, through irritation, swallowing movements, and thus it is that large quantities of septic material are forced directly into the stomach, in this way causing an infection. In several children where stomach washing was resorted to, large quantities of catarrhal (usually muco-purulent) exudation was found, corresponding with the increase or decrease of existing catarrhal pharyngitis.

Dr. Fischer has observed numerous cases in which by attending and curing the pharyngitis the gastritis ceased.

LARYNGEAL COMPLICATIONS IN TYPHOID FEVER.[5]

In severe cases of enteric fever various throat complications have been described, but their connection with the original disease has not been satisfactorily established. In *L'Union Médicale* of March 10, 1891, Professor Peter describes the case of a man who died of typhoid fever, and in whom the throat complications were well marked. In commenting on the case, he remarks that hyperæmia of the larynx is a common symptom of typhoid fever, being most marked on the aryteno-epiglottidean folds. Ulceration following this condition was first noticed by Louis, in 1828, who stated that if at a necropsy extensive ulceration of the larynx was found, and if tuberculosis could be excluded, typhoid-fever lesions should be sought for. Occasionally, when the laryngitis is intense, Eberth's bacilli are found in the glands around the larynx. An œdematous swelling often appears, and the inflammation may lead to suppuration, extensive ulceration, and even destruction of the cartilages.

Laryngitis, in connection with enteric fever, assumes two chief forms: the acute and the chronic. The first mentioned develops from the fifteenth to the twentieth day, at the time when the disease ought to be subsiding. Its onset is marked by local pain, difficulty in swallowing, and dyspnœa, chiefly affecting inspiration, expiration being perfectly easy. The difficulty of breathing gradually increases, generally requiring tracheotomy to be performed in order to prevent death by suffocation. Post-mortem, there is found sero-fibrinous, or purulent infiltration, with commencing destruction of the epiglottis and the arytenoid and cricoid cartilages. The more chronic form does not commence until convalescence has been well established, at least two months after the termination of the attack, and when the patient is apparently cured. The voice becomes hoarse, there is evident difficulty in speaking, and finally symptoms of œdema of the glottis appear. The prognosis is then very grave; according to Lestier, of ten cases which required tracheotomy, all proved fatal. Some German statistics show that of nineteen cases that required operation, seven only recovered. Even if a cure is effected, the condition is a very unsatisfactory one, as the canula has to remain in position for an indefinite period, and the cicatrices which form in the larynx often producing such constriction as to cause almost total obstruction.

In short, in all the parts affected by enteric fever, there is a tendency to ulceration, and this is particularly liable to occur in the larynx, and if such happens, the submucous tissue becomes infiltrated, and perichondritis follows in its turn. Finally, there is erosion of the cartilage; and, if the patient survives, there are premature ossification of the cartilages and necrosis of the epiglottis and of the arytenoid and cricoid cartilages. Sometimes a small portion of cartilage may be detached — a very dangerous occurrence, as it is very apt to fall into the trachea and cause alarming symptoms, and even death from suffocation. At other times the whole cricoid cartilage may become detached, and be ejected in the form of a sequestrum. The only treatment likely to be effectual is to apply counter-irritants, such as blisters, to the front of the neck.

INTUBATION OF THE LARYNX.[6]

A paper, by Dr. Dillon Brown, of New York, on the construction of O'Dwyer's tubes, read at the meeting of the American Pediatric Society, is published in

[4] Medical Record, June 13, 1891.
[5] Lancet, April 4, 1891.
[6] Supplement to the British Medical Journal, February 21, 1891.

the *Archives for Pediatrics* (January, 1891). The author stated that many of the tubes in use were badly constructed, and that the failure of the operation was often due to such defects. Minute instructions for the guidance of the surgical instrument maker were contained in the paper, but the desirability of having a good pattern to work by was also mentioned. Three sets of tubes were described — for children (six tubes), for adults (ten tubes, of which three only are required for acute stenosis), and for the treatment of foreign bodies or loose membrane (seven tubes). The first two sets are of the same pattern, and are made of brass heavily plated with gold. The tubes for foreign bodies or membrane are made of very thin German silver. These tubes are short (one and one-eighth inch), cylindrical, but tapering a little towards the lower end, and the head is smaller than in the ordinary tubes. The tube, it was stated, was intended to fill the larynx to its full subglottic capacity, and was held in position by the pressure. It was believed that any foreign body which could enter the larynx, provided it were not of a nature to swell by imbibition, might be expelled through such a tube. In the ordinary tubes an artificial epiglottis introduced fresh sources of danger, and was not necessary since experience showed that swallowing was not difficult if, during the act, the head were placed in such a position that the pharynx was lower than the larynx.

Dr. Brown added a table increasing the total number of cases treated by him to 350; he reported altogether 100 recoveries, or 28.5 per cent. It appears from the table that in his last 50 cases Dr. Brown had 13 recoveries, or 26 per cent., and that four of these cases were not suffering from diphtheria. Of the 37 cases that died, five only were not suffering from diphtheria. As to the danger of sudden asphyxia from pushing the membrane down in front of the tube, Dr. Brown stated that in over 600 cases in which intubation had been performed by himself or Dr. O'Dwyer, this accident had not occurred once.

Reports of Societies.

ASSOCIATION OF AMERICAN PHYSICIANS.

THE SIXTH ANNUAL MEETING, HELD IN WASHINGTON, SEPT. 22–25, 1891.

(Continued from No. 16, page 415.)

THIRD DAY. — THURSDAY.

THE RELATIONS BETWEEN ARTERIAL DISEASE AND VISCERAL CHANGES.

DR. GEORGE L. PEABODY, of New York, Referee:[1]

The causes of arterio-sclerosis are varied, whether due to syphilis or not, we cannot always say. We look for the lesion in the blood-vessels, and in particular in the arteries. From an examination of the intima of the artery it cannot be said what is the cause, just as in phthisis we find well-marked sclerosis, not tubercular in nature. In the thickening of the walls of the arteries in Bright's disease, the cause of the fibrous growth has hitherto escaped detection. It is hard to find out which the cause and which the effect of the change in the kidneys and in the blood-vessels.

[1] Dr. Peabody's paper will appear in full in the next issue of the Journal.

After partial study, Thomas came to conclusions which we may in part accept. The interstitial inflammation in the kidney is the cause, not the effect, of the change in the arteries. The changes in the artery begin after birth. This change extends gradually. First, there is a slowing of the blood-current in the aorta: the circulation in the two umbilical arteries ceases at birth; the arteries become disproportionately large. The result is that the blood-current passes through it more slowly. The new growth in the intima tends to reduce the size of the artery, and this is due to the cessation of the circulation in the placenta. The same changes occur in arteries whose size is suddenly diminished by surgical procedure, ligature, etc. There is a lesion in the intima, the endothelium of the blood-vessel becomes affected, a dilatation takes place, a slowing of the blood-current, changes in the vasa vasorum, a thickening; the sensitive nerve-filaments in the arterial walls appreciate the change in the vasa vasorum. The tension of the arterial walls is the cause of the form taken by the growth under different circumstances. As soon as the blood-current is settled, the changes stop. The change is a purely mechanical one. Diseased arteries give less blood to the organs than they require to have, and this goes on causing more and more change. We may have senile changes, changes in the arteries, veins, or capillaries, and these may occur in a great variety of conditions. It is seen with corresponding changes in the kidney, testicles, and other parts. Heredity gout, rheumatism, functional arterial strain, and many other causes may be at hand.

The effects of these changes in the arteries may lead to an aneurism. The walls, being weakened, dilate, they are less elastic than normal. There is increased pressure, and the lumen of the vessel is increased too. At first, the intima of the artery is able to withstand the pressure, but later it cannot. This dilatation can be produced artificially in other vessels, but it cannot be done in healthy arteries. The time within which an aneurism can be produced while this change is going on, is supposed to be one year, and after that time the intima becomes so reinforced that the aneurism cannot be formed. This is the rule for each vessel, so that as changes occur, first in one vessel, and then in another, the danger of the formation of an aneurism in any one vessel would exist during one year after the vessel was affected; but as all the changes do not go on in all the vessels at the same time, the period of danger would be between thirty-five and forty-five years. The diagnosis of this trouble can also be made from an ophthalmoscopic examination. The carotid vessels are generally early affected. It is a common cause of the left ventricular hypertrophy, which is caused by the overtaxation of the muscular fibres of the heart, with a diminution of the elasticity of the arterial walls.

DR. W. T. COUNCILMAN, of Baltimore, Co-referee:

When we neglect the earlier publications which have appeared on this subject and which have chiefly referred to the histological details of the processes in the organs, the two most important publications are those of Gull and Sutton and of Thoma. Gull and Sutton describe, under the name of arterio-capillary fibrosis, a general disease, the chief lesions of which consist in the formation of hyaline or slightly striated connective tissue in the adventitia of the small arteries and capillaries. In the kidneys the process extends

from the adventitia of the vessels into the interstitial tissue, causing the parenchymatous elements to atrophy. There is also some formation of the same tissue in the intima of the vessels. Thoma, in a remarkable series of publications in Virchow's *Archiv*, in the last few years discusses the entire question of endarteritis and arterio-sclerosis, and endeavors to trace in the process the action of a common law. He starts out with the study of the lesions which take place in the aorta of the child after the closure of the umbilical arteries and the ductus Botalli. He finds that there is an endarteritis of the aorta limited to the portion between the ductus Botalli and the umbilical arteries. He has also studied the changes which take place in the arteries of an amputated stump, and he finds that whenever the vascular bed is too wide for the territory to be supplied, that there is an endarteritis set up which restores the calibre of the vessel to a normal relation. He divides arterio-sclerosis into three varieties, one the nodular endarteritis, another the diffused primary arterio-sclerosis, and the other the secondary arterio-sclerosis. In the first two of these there is a lesion of the media causing a dilatation, with a following formation of connective tissue which fills up the dilated portion and restores the artery to a normal calibre. In the nodular, only small areas of the vessel are affected, and in the diffused primary the entire aorta and larger arteries may be affected. The secondary arterio-sclerosis is due to dilatation of the aorta, which arises from an increase of blood-pressure due to peripheral resistance caused by changes in the minute arteries. It is this third variety of arterio-sclerosis in which we are most interested.

In the last two and a half years at the Johns Hopkins Hospital there have been forty-one cases of general arterio-sclerosis. These can be divided into two forms, the senile endarteritis and the diffused arterio-sclerosis. In the senile endarteritis there are changes in the aorta, which are chiefly degenerative and which are part and parcel of the senile changes in the body generally. The arteries are frequently converted into rigid calcareous tubes. There is no heart hypertrophy unless there are changes other than those in the arteries to account for it. In the fourteen cases of senile endarteritis which we have examined there was heart hypertrophy in seven cases. Of these, two cases were complicated with disease of the aortic valves and in five, the senile endarteritis was complicated with other changes to be described. The subjects of this are mostly men of advanced life. In the diffused arterio-sclerosis we have not been able to make the two divisions which Thoma has made into primary and secondary. The subjects of this are usually men in the prime of life, well nourished, muscular individuals. As a rule, there is no œdema; and when there is, it comes on in the last days of life and is due to chronic passive congestion arising from the dilated heart. The heart in many cases is enormously hypertrophied. In one case the heart weighed 850, and in another case 820 grammes. With the heart hypertrophy in the advanced cases there is also a great deal of dilatation leading to incompetence of the valves. The aorta and large arteries are thickened not only homogeneously, but there are scattered elevations over the surface and fissures in it. The arteries are also elongated, this being seen not only in the accentuation of normal curves but in the formation of curves where none exist.

The kidneys and liver were more intimately studied than any other organs, not only on account of the importance of the lesions in these, but on account of the facility which their tissues offer for the study of the smaller vessels. The kidneys were of normal size or slightly reduced. Frequently the changes were so slight that they would scarcely be noticed on a superficial macroscopic examination. The capsule in some cases stripped off easily, in others it adhered slightly and when stripped, small losses of substance were seen. In other cases there were deep depressions on the surface of the kidney, corresponding to more extensive losses of substance. On microscopic examination various degenerative changes were seen in the renal epithelium and there was a formation of fibrous tissue both in bands going down from the cortex and more diffusely over the entire organ. All of the small arteries were affected. The disease here consists chiefly in an enormous thickening of the intima, the thickening being due to the formation of a hyaline or slightly striated tissue containing relatively few cells, and various degenerative changes in the media and elastica. The muscular fibres of the media were atrophic, fatty, and frequently the entire media as such was gone, its place being supplied by a rather dense connective tissue. The glomeruli were also affected, the chief lesions being thickening and obliteration of the capillaries with the formation of connective tissue between them, and, coincident with the atrophy, an increase in the thickness of the capsule. The macroscopic appearance of the kidney may present little change but there is increased resistance of the tissue on cutting or tearing the organs.

The changes in the liver are but little marked to the naked eye. Here also there is an increased density and resistance to the tissue. The finger can be thrust into it with difficulty, and it is more difficult to break or tear the tissue. On microscopic examination the capillaries are little if at all dilated, the liver-cells are small and atrophic, and the capillary walls are greatly thickened. One of the most marked features is fatty degeneration of the stellate cells of Kupfer. The changes in the larger arteries and in the aorta are very similar to those in the smaller arteries. Here, also there are various degenerative lesions of the media and elastica with a thickening of the intima. In the brain and elsewhere there is evidence of diffused connective tissue formation leading to increased density. We do not think that it is necessary to assume, as Thoma has done, that this new formation of tissue in the intima is due entirely to a dilatation, but is due rather to the connective tissue formation which always follows a degeneration. The dilatation, it is probable, will also act in assisting this. As for the second variety of Thoma, it is not at all sure that increase of blood pressure in itself will lead to any dilatation and endarteritis of the arteries; on the contrary, we have examples enough in which, with an enormously hypertrophied heart, we have normal arteries. We would regard arterio-sclerosis as a general disease in which the primary lesions consist in fatty and various other degenerations of the media of all the arteries of the body, the changes in the tissue depending upon lack of nutrition, resulting from these arterial lesions and followed by diffused formation of connective tissue.

Dr. William M. Ord, of London, did not criticise the papers of Drs. Peabody and Councilman, which he characterized as most able and comprehensive; but he gave some of his own experience with certain forms of

arterial disease. . . . There is a question whether the changes in the arteries and capillaries are the result of renal disease or part of the cause of it, or are a part of a disease affecting the whole system, perhaps most characteristically seen in the kidneys on the one hand, and in the arteries on the other. For his part, long observation inclined him to think that it is not merely a disease of the arteries or kidneys, but a general disease affecting the whole system, and very closely associated with gout,— gout depending on injudicious feeding, to a large extent, in the way of both food and drink. He could recall at least twenty men, whom he had known in one of the suburbs of London, who ate heartily of meats, and washed them down with liberal libations of alcoholic beverages, but who never became drunk, who fell away in middle age with symptoms which began in more or less of a gouty fashion, and ended with distinct contracting granular kidney. Some years ago Dr. Ord asked the demonstrator of pathology at St. Thomas's Hospital, London, to examine the great-toe joints in a series of people, aged between forty and sixty, with regard to the presence in them of a deposit of urate of soda. In about 130 cases taken hap-hazard, deposit was found in seventeen cases. Of these seventeen, twelve had unmistakable contracting granular kidney, often very pronounced; and in the remaining five there were in all changes in the kidney of an allied nature. Not always was there only contracting granular kidney, but composite changes in which it was clear that arterial degeneration took a considerable part.

Referring to a case cited by Dr. Peabody, of a boy dying of cerebral hæmorrhage, Dr. Ord said that as far as he was aware we do not get cerebral hæmorrhage of large bulk in the young without aneurism, either miliary or larger. A case had come under his observation of a boy dying from cerebral hæmorrhage. His brain was twice examined by others for aneurism, with negative results. Dr. Ord was satisfied that an aneurism must exist, and a third search revealed an aneurism, about the size of a pea, communicating by a slit-shaped orifice with the cyst containing the blood clot. Both with regard to a great deal of cerebral and pulmonary hæmorrhage, we must refer still more and more to aneurism as a source of the bleeding.

Dr. W. T. Gairdner, of Glasgow, speaking on the subject of the relation of arterio-sclerosis to aneurism, thought that forces of a mechanical kind, acting upon the arterial coats from within, give the first impulse to local dilatations and thus tend to the production of aneurism. Dissecting aneurism has in all probability some relation to strain of the inner coat of the artery; the peculiarity of dissecting aneurism being that the inner coat becomes severed and the blood is admitted to free communication with the middle coat, and instead of forming a pouching aneurism it dissects the fibres of the middle coat. A case was described of a young and athletic negro, who leaped down a distance of fifteen feet, receiving a shock which soon brought his life to a close. Examination showed a tear of half an inch or so in the inner coat of the aorta from which the blood had started a separation of the fibres of the middle coat for an inch or two, then there was a new rupture of the outer coat opening into the pericardium at a point two or three inches from the point of the internal rupture. This case illustrates a dissecting aneurism in the very act of its production in an artery not visibly diseased. If a strictly healthy artery torn in this way under strain may lead to dissecting aneurism, it seems likely that in arteries which have not undergone much degenerative disease, but in which the inner coat is brittle or gets accidentally ruptured, the result of strain may be, in certain cases, a dissecting aneurism; and if there is much softening of the middle coat and the strain is not such as to lead to a positive rent, the same kind of strain, which produced in the first instance rupture of the vessel, might probably result in a bulging of the middle and inner coats, and that bulging once produced might lead to agglutination of these coats so as to protect them against the dissecting process, but, on the other hand, to expose them still more to irregular dilatation, and that, gradually, by the force of the blood, such dilatation would become sacculated and enlarge into an aneurism.

Dr. Gairdner's pathological experience had not prepared him for the apparently precise statement of Dr. Peabody, that the period of degeneration, during which the liability to aneurismal protrusion is likely to be established for the first time, extends over about a year. But it may well be so, for it is a matter of daily experience that in the very advanced stages of anterio-sclerosis, when the greater arteries are not only degenerated throughout, but infiltrated with calcareous matter, aneurisms are relatively rare. It may therefore be taken as probable that atheromatous infiltrations pass in this way toward a kind of healing, — a healing which is not only incomplete but is fraught with new kinds of dangers to life.

To the statement of Dr. Peabody, that, in attacks of angina pectoris, there is a difference in the radial pulses, Dr. Gairdner took exception; for, as far as his reading and personal knowledge of the subject went, there was no such difference, unless the angina-like symptoms depend, as they may do, upon aneurism.

Referring to Dr. Ord's experience with gout, Dr. Gairdner said that the experience of London is like the experience of no other place in the world in regard to gout. In Scotland, there is not the same form of gout as in London, although gout is doubtless increasing there at the present time, due to the development of habits of self-indulgence in connection with indolence.

INTESTINAL PERFORATION IN TYPHOID FEVER,

by Dr. Reginald H. Fitz, of Boston.[2]

This complication is found in about one per cent. of all cases of typhoid fever, and is the cause of death in something more than six per cent. of the fatal cases. It rarely occurs in children, and is twice as frequent in man as in woman. It is present in the small intestine in more than four-fifths of the cases, and usually proves fatal during the first week after its occurrence. It takes place in mild or severe cases, and its symptoms may be absent or latent, gradual or severe.

Differences of opinion concerning its prognosis have existed for many years, and are based upon a lack of agreement as to the value of the symptoms. Though these are often called characteristic they give evidence only of a peritonitis general or circumscribed. This may, in typhoid fever, result from a variety of causes, and fatal perforation may occur without any symptoms suggesting its presence.

Most cases of recovery from symptoms of perforation of the bowel in typhoid fever, are those in which an attack of appendicitis is closest simulated, while

[2] See page 346 of the Journal.

the great majority of the fatal cases are those in which other parts of the bowel than the appendix are perforated. It is probable that the appendix is more often inflamed and perforated in typhoid fever than has, hitherto, been suspected.

The prognosis of apparent perforation of the bowel, in typhoid fever, is to be regarded as the more favorable the more closely the symptoms and their course resemble those of an appendicitis.

In the treatment of this complication early laparotomy is reported to have been tried in ten cases, with but one successful result; while of twenty-seven cases of circumscribed peritonitis in typhoid fever, largely attributed to intestinal perforation, three recovered after incision, seventeen after resolution, and nine after the spontaneous discharge of pus.

It is recommended that immediate laparotomy be employed for the relief of suspected intestinal perforations in typhoid fever only in the milder cases of this disease. In all others evidence of a circumscribed peritonitis should be awaited, and may be expected in the course of a few days. Surgical relief of this condition should then be urged as soon as the patient's strength will warrant.

Dr. DaCosta thought the paper of Dr. Fitz was of the thorough and lucid character which we always associate with the name of its author. With reference to the point made of early perforation and an operation for its relief, Dr. DaCosta related his own experience. One case was extremely valuable because it was operated upon within four or five hours after the perforation. The patient, a young man of nineteen, had typhoid of rather severe type. The fever terminated in the fourth week, and everything was supposed to be in complete convalescence. Ten days after this the patient was seized with violent pain in the right iliac fossa, and soon signs of collapse came on. The family physician sent for Dr. DaCosta, but even before his arrival an operation had been determined upon. An eminent surgeon, Dr. Mer[illegible], performed the operation. The result was worse than negative. He seemed to rally for a little time, did well apparently thirty-six hours, and then died. In a second case the operation was performed about thirty-six hours after the perforation, with like results. The intestinal lesions were found to be several inches above the ileo-cæcal valve. Dr. DaCosta would never sanction an operation in perforation unless a causal appendicitis could clearly be made out, or for the relief of a patient from a peritonitis.

ON THE RELATION OF DRINKING-WATER TO DISEASE,

by Dr. Henry P. Walcott, of Cambridge, Mass.

The vast literature upon the subject of drinking-water and its influence upon human health contains but little that is of real value to the physician, in helping him to cure or prevent disease.

Chemical analysis has failed to distinctly indicate the waters which may produce disease; for of two waters, one capable of producing serious disease and the other not, the first may be found to contain less of suspicious substances than the second. Chemical examinations made when epidemics prevailed revealed undoubted pollutions; but, so far as chemistry was relied upon as a proof, the pollutions were often no greater during an epidemic of infectious diseases than they had been before it, and no less than they would be when the epidemic was past.

Improvements in the methods of determining both the kinds and the number of the minutest forms of organic life, and the proved connection of some of these forms with infectious diseases, have given to us more satisfactory means for the proof of the harmfulness of certain waters than chemical analysis has hitherto afforded.

There are many ways in which a water may produce disturbances in the human system. The human parasites which are known to occur in surface waters are numerous, and may enter the body fully developed or in the form of ova. They are easily found in the water by the use of the microscope, and can be readily removed by filtration or destroyed by the application of sufficient heat. Again, waters may contain substances which, either by quality, or by mere quantity only, disturb the system. The well-known action of some of the mineral contents of natural water may be cited. Bacteria found in water are for the most part harmless when taken into the human stomach, but there are a limited number of disease-producing bacteria associated with the harmless varieties, which have come from the excreta of the sick, which have gained access to bodies of water used as sources of supply. In our present lack of accurate knowledge, we may also assume that certain bacteria, which are not in the line of descent from those which have ever been present in the diseased human body, may, upon gaining entrance to it, become a cause of disease. As the senses of sight, smell, and taste offer us no protection against the waters that contain any of the now-known disease-producing bacteria, we must seek for safety the waters which are known to be unpolluted by sewage, or, if this be impracticable, waters which, though sometimes polluted, have been rendere harmless. Methods for the biological examination of waters have not yet been devised that are practically available for the purpose of protection.

As an instance which goes to show the connection of an infectious disease with the domestic use of river-water, the experience of Lowell and Lawrence, Mass., with typhoid fever was cited. Lawrence and Lowell are both situated upon, and derive their water-supply from the Merrimac River. The in-take of the Lawrence water-works is nine miles below Lowell. The Merrimac has always been regarded as a marked instance of the capacity of a large body of water moving rapidly to purify itself. There is nothing in the appearance and taste of the water to deter a community from its use, nor does the chemical analysis indicate a water too polluted for drinking. The average death-rate from typhoid fever, of all the cities of Massachusetts, for twelve years, from 1878–89, was 4.62 per 10,000; for the same period in Lowell, the rate was 7.63, and in Lawrence 8.33 per 10,000. The death-rates of Lowell and Lawrence from typhoid do not vary essentially from those of the State, as a whole, up to the month of September. From this month on, a condition of things exists in the two cities distinct from what is observed elsewhere in the State; that is to say, the deaths from typhoid fever continue to increase in number in Lowell until December, and in Lawrence till a still later date, whereas in the rest of the State the disease begins to decline in November. We find such a condition of things to exist as we should expect to find if a disease capable of being transmitted by the infected excreta of those sick with it had prevailed during the late summer and early

autumn, at some point on the river above Lowell. The infected discharges of the sick in Lowell would, with the sewage of the city, enter the river nine miles lower down, and would be taken into the water-supply of Lawrence, causing there a later outbreak of the same disease that had prevailed in Lowell. It is suggestive that the city of Haverhill, situated on the Merrimac nine miles below Lawrence, but not deriving its water-supply from this river, had a typhoid fever death-rate, in 1889, of only 3.33 per 10,000.

In the past year Lowell and Lawrence experienced an epidemic of typhoid fever of great severity. An apparently successful attempt was made to prove the existence of cases of typhoid fever at points on the river above Lowell, and to show that the discharges from the bowels of the sick had found immediate entrance to the river. In the months of August and September, several well-defined cases of the disease had occurred in people living along the course of Stony Brook, an effluent of the Merrimac, entering the river at a point about two and one and half miles above the in-take of the Lowell water-works. Some of the sick, in the early stages of the disease, had made use of the privies which overhang the brook.

The temporal connection of these cases was such that, with the allowance of two weeks for the time occupied by the incubation and early stages of the disease up to the time of taking to bed, we find an apparently direct relation to the serious increase of the disease in Lowell in the latter part of October, 1890. The amount of infective matter did not at this time appear to be sufficient to pollute the river, to the same serious extent, at the in-take of the Lawrence water-works nine miles below Lowell. With the increase of the disease in Lowell there came the growing specific pollution of the river, and the people of Lawrence began, in turn, to suffer.

Dr. Walcott quoted many interesting facts about the water-supplies of the State of Massachusetts which have been ascertained as the results of the thorough physical, chemical and biological examinations being conducted under the supervision of the Massachusetts State Board of Health, and which will appear in the reports of the board.

PATHOLOGY OF PERNICIOUS ANÆMIA,

by Drs. J. P. Crozer Griffith, and Charles W. Burr, of Philadelphia, Pa.

The subject of the various affections constituting forms of anæmia is very obscure, but some system of classification is necessary for purposes of study. We offer a tabular scheme, according to which anæmia is divided into the non-cytogenic and the cytogenic forms. The second division contains such forms of anæmia as chlorosis, leukæmia and lymphatic anæmia. The first division contains, among other sub-divisions, the hæmolytic varieties; and first among these stands pernicious anæmia.

A number of cases have been published which would seem to show that no sharp lines of demarcation exist between many of the various forms of anæmia. Among these are instances of apparent change of lymphatic anæmia into leukæmia, chlorosis and leukæmia into pernicious anæmia, etc. Yet there is, we think, good reason to believe that at least many varieties of anæmia are totally distinct — certainly that chlorosis is to be sharply separated from pernicious anæmia.

Various theories have been held regarding the pathology of pernicious anæmia. Apart from some which have found no general acceptance, the belief that it is a cytogenic disorder has been by far the most widely accepted theory. This was based on the hyperplastic alteration in the marrow of the long bones seen in this disorder. Later, however, doubts began to arise regarding the truth of this view, inasmuch as the same alteration was at times found in anæmias of other forms, and could be produced in animals by bleeding them. Authorities began to regard the marrow-change in pernicious anæmia as secondary simply. The same remark applies to the alteration in the shape of the red blood corpuscles. A second view, held by several, is that excessive hæmolysis occurs in pernicious anæmia, but that this is due to an imperfect cytogenesis, which causes the corpuscles to break down very readily. A third view is that brought into prominence by Hunter: that pernicious anæmia is a hæmolytic disorder, entirely independent of any defect in cytogenesis. This latter theory has been corroborated by later observers, and is, moreover, in accord with the earlier researches of Quincke, Peters and others. Hunter based his conclusions on the great increase and characteristic arrangement of an iron-holding pigment in the liver in pernicious anæmia; on the character of the urine, indicating excessive blood-destruction; and on the fact that by the administration to animals of a certain hæmolytic agent (toluylendiamine), the deposition of iron in the liver could be produced.

We have examined the liver in three cases of pernicious anæmia. The sections were treated with a solution of potassium ferrocyanide, and then with a dilute solution of hydrochloric acid. The Prussian blue reaction was produced in the granular matter in the liver, the remains of the degenerated blood-cells. A very great increase in the amount of this iron pigment was visible in all these cases. The dark-blue granular matter was deposited abundantly in the hepatic cells of the outer and middle zones; the cells of the inner zone of the lobules containing but little or none. A yellowish pigment, unaffected by the reagents, was present to some extent in the cells in the neighborhood of the central vein.

As check observations, we have examined a large number of livers from different disorders. In none of these was there iron present in an amount at all comparable with that seen in pernicious anæmia. In most instances iron was entirely or nearly absent. To a few of these cases some brief remarks must be devoted.

A case of fibrous cancer of the liver, stained with carmine, exhibited large yellowish patches irregularly situated, partly in the cells and partly in the fibrous tissue. Treated with the ferrocyanide, these patches became blue. On the other hand, a case of emphysema and dilated heart exhibited considerable yellow pigment in the liver, which did not react to the ferric test. Still another case, one of pernicious malaria, exhibited much black pigment in the liver, and this did not react with the ferrocyanide.

These cases, as well as those of pernicious anæmia, prove that there are various sorts of pigment in the liver, some of which give the reactions of iron and others not.

A case of infectious hæmoglobinæmia in the newly-born exhibited no iron in the liver, and only a slight blue tingeing of the tubules of the kidney, but no actual deposit of pigment there. In one of the cases

of pernicious anæmia a decided deposit of granular blue pigment was present in the cells of the convoluted tubules. It therefore appears, that in systemic hæmoglobinæmia, as illustrated by pernicious malaria and infectious hæmoglobinæmia, iron is not deposited in the hepatic or renal cells, while in portal hæmoglobinæmia this deposition does take place. The reason for the difference does not appear clear.

The liver from a case of leukæmia and that from one of lymphatic anæmia exhibited no noteworthy increase of iron. There was, therefore, no analogy in this respect between these two cytogenic anæmias and pernicious anæmia.

The liver was examined in several cases of Bright's disease and of phthisis, and no iron found. It was also examined with a similar result in a case of cancer that exhibited great anæmia and cachexia during life.

In conclusion, we feel justified in accepting the theory, that in pernicious anæmia there occurs a deposition of iron in the liver unlike that seen in any other disease; and that, as a deduction from this and other facts, pernicious anæmia is a form of hæmolysis, a non-cytogenic anæmia. In a broad sense, the disease may be said not to be a unity, since different poisons might produce the same destruction of blood. Toluylendiamine, given by Hunter to animals, produced the same alteration in the liver. Pyrodine has rapidly brought about excessive anæmia in man through its hæmolytic action. The instances of what seemed to be pernicious anæmia due to bothriocephalus latus, to atrophy of the gastric mucous membrane, and to decomposition of food in the stomach (case of Meyer), were probably the result of absorption of some hæmolytic poison. There is, however, no reason on account of this to consider pernicious anæmia as not an entity but as simply a symptomatic condition, because these affections may exist without the symptoms of the blood disorder. It is rather a distinct and superadded disease, which may arise whenever some certain poison is present and is absorbed, and which may rarely complicate any other affection.

As already stated, no absolute objection can be made against refusing to pernicious anæmia the title of an independent disease on the ground that more than one toxic agent may cause symptoms very similar to it. Besides certain ptomaines, it is probable that pyrodin and certain other antipyretics and other drugs capable of destroying blood may produce the characteristic symptoms. It seems better, however, to regard all these cases, including the anæmia seen in atrophy of the gastric mucous membrane and accompanying bothriocephalus latus, as other and different forms of hæmolytic anæmia. It would then be a just conclusion to regard pernicious anæmia, in the ordinary sense of the term, as a truly independent affection, which may be defined as an extreme and increasing anæmia, without marked loss of flesh, not directly secondary to any anatomical lesion or the presence of any parasite, but due, as Hunter suggests, to the entrance into the portal circulation from the intestines of some certain hæmolytic agent whose origin is unknown, but which is probably of the nature of a ptomaine, perhaps produced by a micro-organism.

ON CHANGES IN THE RED BLOOD CORPUSCLES IN THE PERNICIOUS ANÆMIA OF TEXAS CATTLE FEVER,

by Dr. Theobald Smith, of Washington.

When a series of preparations of blood from cases of progressive anæmia in this disease are fixed according to Ehrlich's method, stained in alkaline methylene blue, and decolorized for one or two seconds in a three-tenths to five-tenths per cent. solution of acetic acid, certain peculiar conditions of the corpuscles may be noted. When the number has fallen slightly below three million, a small percentage appear with a variable number of stained particles disseminated uniformly through the corpuscle. In some cells these particles are relatively large, many attain a diameter of 0.5 m. and then appear strikingly like micrococci, if it were not for a certain variability in size. Each corpuscle may contain from five to twenty or more of these bodies. To those who for the first time examine a stained film of such blood, they are quite puzzling. In the more crowded areas of the film, groups of coccus like bodies appear everywhere, each group representing the disc of some enlarged corpuscle, the outlines of which are, as a rule, not distinct in such situations. As the number of cells continues to fall, corpuscles appear which are beset with an increasing number of stained particles, diminishing in size until forms appear, the disc of which seems covered with a precipitate of exceedingly minute stained points. Not all the particles with recognizable form are round, coccus-like, but some are angular and some appear like very short rods. As a rule, the smallest particles are associated with the more advanced stages of anæmia, although cells with the granules of various sizes are found together. When the number of corpuscles has descended to between one and a half and two millions, a still farther modification appears. Many of the large corpuscles now retain a uniform and pronounced bluish-red color after staining. Such corpuscles are usually somewhat folded owing to their thinness. The edges are not sharply defined, and within the disc is usually a paler circular or elongated spot from 2.5 to 3 m. in diameter. The stain is not resolved into points by high powers (1,500). Curiously enough, corpuscles containing stained granules have not been detected in preparations from the parenchyma of spleen, liver and kidneys. They are evidently confined to the circulating blood. Diffusely stained cells are not so restricted, but may be observed in the organs as well.

In the blood containing from one to two million corpuscles, nucleated red corpuscles or hæmatoblasts are present. They increase in number as the whole number of corpuscles diminish. Thus in blood containing two millions, they are detected with some difficulty. When the number has fallen to one million, about five per cent. are present. In several instances opportunity was afforded of observing the distribution of hæmatoblasts. In such cases they are equally abundant in the circulating blood, in the spleen, the liver and the kidneys. The spleen thus did not appear to have undertaken any blood-forming functions.

The order in which these different kinds of corpuscles appear in the circulation, as well as the particular stage during which each kind makes its appearance, is, as might be expected, not always as described above, although the description given applies to the great majority of cases examined. In those animals in which the destruction goes on very rapidly, fully two thirds of all corpuscles may have been destroyed before any of the modifications appear, and in most acute fatal cases death ensues before they are observed at all. It is only in the more chronic milder cases that these modifications are best studied. Their disap-

pearance when recovery begins is in the inverse order of their appearance and goes on quite rapidly.

That these morphological variations are due to the anæmia and not to any other cause, may be demonstrated by practising venesection on healthy animals. They were called forth both in a cow and in a lamb, by artificially reducing the number of red corpuscles by blood-letting.

The paper further discusses the nature of these modified corpuscles, and Dr. Smith adopts the theory of their embryonic or transitional character. The observations of Erb, Lowit, Howell, Erhlich, and Gabritschewsky are briefly referred to. The two last mentioned authors seem to have observed the same modifications in human-blood corpuscles. While Ehrlich regarded them as undergoing a coagulation-necrosis, Gabritschewsky interpreted them as corpuscles whose development had been arrested.

In conclusion, attention is called to the clinical value of recognizing immature corpuscles in the circulation.

DR. WELCH: Dr. Smith's paper illustrates the unity of medicine. As Virchow many years ago said, the diseases of animals and those of man are of equal scientific interest, the only difference being in the dignity of the subject of the disease.

Dr. Smith's descriptions of changes in the red-blood corpuscles in Texas cattle-fever are of especial interest, as similar changes occur in certain forms of anæmia in human beings. His interpretation of these changes as all phases in one process, is possibly open to question, at least it is well to consider whether there may not be another interpretation. I have been in the habit of regarding the red corpuscles which stain diffusely — the forms first described by Ehrlich — as representing one form, not of degenerating but of developing corpuscles; the form with a small number of deeply stained, often irregular particles as a red corpuscle containing nuclear fragments; and the small regular granulations, scattered uniformly in large number through the corpuscle, as specific granulations in Altmann's sense. Dr. Smith's view that all of these forms belong together, and are transitional one to another, is interesting. He may have found in the blood of cattle affected with Texas fever, an object which will solve several important problems in the physiology and pathology of the blood.

(To be continued.)

AMERICAN LARYNGOLOGICAL ASSOCIATION.

THE Thirteenth Annual Meeting of this Association was held at Washington, D. C., as a part of the Second Triennial Congress of American Physicians and Surgeons, September 22d to 24th inclusive.

THE ANNUAL ADDRESS,

delivered by the President, DR. WM. C. GLASGOW, briefly reviewed the development of laryngology since the Association had been organized, and congratulated the members upon the many valuable contributions to be found in its proceedings, and upon the growing interest in the progress of this special department of medical science now shown in the general profession. The death of Dr. Egbert Carroll Morgan, of Washington, ex-President of this Association, and also of Hosmer A. Johnson, of Chicago, were noted, and appropriate action taken.

The Association increased its limit of membership from fifty to seventy-five, and elected Dr. J. H. Bryan, of Washington, a fellow.

The library of the Association was, on recommendation of the Council, directed to be deposited in the National Medical Library of the Surgeon-General's office, Washington.

The officers for the year 1891-92 were chosen as follows: President, Dr. S. W. Langmaid, of Boston; first Vice-president, Dr. Morris J. Asch, of New York; second Vice-president, Dr. S. Johnston, of Baltimore; Secretary and Treasurer, Dr. Chas. H. Knight, of New York; Librarian, Dr. Thos. H. French, of Brooklyn; Member of Council, Dr. Wm. C. Glasgow, of St. Louis.

Boston was selected as the next place of meeting. The date is to be named by the Council.

The annual dinner of the Association at the Hotel Arno, September 23d in the evening, was a social feature which was much enjoyed by the fellows and invited guests, although the unusual warmth of the weather was not conducive to extensive gastronomic effort.

A CASE OF FOREIGN BODY IN THE TRACHEA,

was reported by the President, DR. GLASGOW.

A toy balloon had been inhaled by a colored child, about eight years of age, two hours before she was brought to the polyclinic; nothing was revealed by laryngoscopic examination, but attacks of aphonia and dyspnœa required the performance of tracheotomy. On the fifth day, the rubber balloon was found at the bottom of the tube and withdrawn, and subsequently the wooden whistle was pushed through the larynx and removed by the mouth. The child recovered. The inability to detect the foreign body by laryngoscopy was attributed to the wooden portion being enveloped in the rubber, which was so nearly the color of the mucous membrane that it could not be distinguished from it. There was only partial obstruction to respiration, except when the air got under the balloon and lifted it up into the trachea, when the attack subsided it fell back into the left bronchus, and the attack ceased.

A CASE OF THYROTOMY IN A CHILD EIGHTEEN MONTHS OLD,

was reported by DR. CLINTON WAGNER, of New York.

The patient, from exposure and neglect, had suffered for several months with chronic laryngitis with persistent hoarseness. It subsequently developed spasmodic attacks of dyspnœa for which Dr. Wagner performed tracheotomy. Two weeks later he did a thryotomy and removed a small papilloma from the left vocal band, near its posterior extremity. The patient immediately was relieved of its symptoms and made a good recovery after the operation, but perished several months later from the grippe, which was then prevailing. The reporter considered the case a success and wished to add it to three cases he had previously published. He had performed the operation ten times; six were fatal, though death was not caused directly by the operation. He said that he approved of thyrotomy for the removal of laryngeal obstruction from foreign body or benign growth, but considered it of doubtful propriety in malignant disease, except as a palliative where the obstruction is too great, or in

those cases where it is possible to entirely remove the diseased portion. In tuberculosis of the larynx, he pronounced it unjustifiable except as a palliative in great emergency.

Dr. Mulhall advocated the removal of papillomata from the vocal chords by the use of the index finger-nail, and referred to several cases treated in this way.

The use of anæsthetics was discussed, and generally discountenanced in laryngeal obstruction.

Dr. Wagner declared that, in children under three years of age, removal of papillomata by the mouth is impracticable and thyrotomy the only resource.

THE TONSIL IN HEALTH AND DISEASE,

was the subject of Dr. Harrison Allen's communication.

He reviewed the structure of the tonsils, and showed that the openings usually called follicles are channels or crypts from which diverticula extend; these are lined with mucous membrane, in which are closed follicles, analogous to the agminated glands of the small intestine. In treating tonsil abscess, he preferred a small incision with subsequent antiseptic applications and free drainage. In obstruction of the crypts, he advocated careful opening and expression of contents followed by astringent injections. He strongly objected to amputation, or transverse section of the tonsils, on account of their complex structure. Experience had shown him that cases of enlarged tonsils are usually accompanied by disease in the naso-pharynx, and, if the hypertrophied adenoid tissue in this situation be removed or properly treated, the enlargement of the tonsils disappears.

Dr. Wright had found the reverse to be true, that if the enlarged tonsils are reduced in size, the adenoid growths in the naso-pharynx get well. He thought that the enlarged tonsils dam up the secretions and thus lead to pharyngeal disease.

THE TROUBLESOME SYMPTOMS CAUSED BY ENLARGEMENT OF THE EPIGLOTTIS AND THE ADVISABILITY OF REDUCING THE SIZE OF THE CARTILAGE BY OPERATIVE MEASURES,

was the title of a paper by Dr. C. C. Rice, of New York.

He recognized an actual and permanent increase of size in the cartilage of the epiglottis, it might be congenital or the result of disease, or abuse of tobacco, alcohol, or from local injuries. Enlargement of the lingual tonsil is an active cause. The symptoms are constant tickling or fulness in the throat, pain, cough, etc. He advocated the removal of the excess of tissue by scissors or cutting forceps. In doing the operation, he makes a preliminary application of cocaine to the throat and epiglottis before administering chloroform. He claims special advantages in this operation, for this combination of local and general anæsthesia.

The appointed discussion on

THE RESULT OF TREATMENT OF THE UPPER AIR-PASSAGES IN PRODUCING PERMANENT RELIEF IN ASTHMA

was opened by Dr. F. H. Bosworth, of New York, and generally participated in. The opinion was expressed by the respondent that, while all cases of nasal disorder do not have asthma, in a certain proportion of such cases this relation exists and most of these are benefited or even cured of asthma by restoring the integrity of the air-passages. He recognized three factors in every case of asthma: (1) a peculiar, nervous state or susceptibility; (2) an external, exciting cause; and (3) a local point of exalted sensitiveness, which is frequently found in the nose. Since his last communication he had seen 85 cases, of which 42 were cured and remained free from the attacks for a year after receiving local treatment, 32 were improved, two were not benefited, and in the remainder no report could be obtained.

NASAL PAPILLOMATA,

was the title of a communication by Jonathan Wright, of Brooklyn, in which a review was given of the literature of the subject and of the microscopic examinations made. It was shown that Hoffmann and others who consider the disorder a common one had based their writings upon inexact diagnosis. The lecturer had found the condition very rare, and occurring, as a rule, on the septum at the muco-cutaneous junction. He advocated the abandonment of the term papilloma and suggested "papillomatous fibroma" as a better designation. It should not be mistaken for masses of glandular hyperplasia occurring in the course of chronic rhinitis, and appearing especially upon the lower turbinated bone.

THE STUDY OF A CASE OF NASAL TUBERCULOSIS,

was the title of a very interesting report of a monkey with catarrhal discharge from the nasal passages, in which numerous tubercle bacilli were found. Under treatment, chlorine-water locally, and good care, the patient improved, the discharge was reduced, and the bacilli became very few. The monkey was subsequently killed and no tubercular lesions found in the lungs or other viscera, and no local signs in the upper air-tracts could be discovered. It was regarded as a case of local tuberculosis, the seat of bacterial growth being in some fold of mucous membrane, which furnished a suitable culture-ground.

CYST OF THE MIDDLE TURBINATED BONE.

A case of this kind was reported by Dr. C. H. Knight, with diagrams and specimen. The cyst has a thin bony wall, and is only seen at the end of the middle turbinated bone, and may occlude the nostril. These cases are not very rare; none of those he had seen were under twenty years of age. The theory of formation of these cysts that the lecturer preferred, was not that which attributes them to rarefying osteitis, but that which regards them as originally a projection of the edge of the turbinated bone, that grows and curls over upon itself until it meets the base where it unites with the bone, thus forming a cyst lined with epithelium. It subsequently grows in bulk, and the secretions may be mucoid or muco-purulent.

VARIOUS FORMS OF DISEASE OF THE ETHMOID CELLS,

was the subject of a systematic paper by F. H. Bosworth of New York. During last year he had seen 27 cases of disease affecting the ethmoid cells. He proposed a clinical division of these cases, into five varieties, as follows: (1) Extra cellular myxomatous degeneration, without purulent discharge; (2) extra-cellular myxomatous degeneration, with purulent discharge; (3) purulent ethmoiditis, with nasal polypi (often with antral disease); (4) intra-cellular, myx-

omatous degeneration, without purulent discharge; (5) intra-cellular, myxomatous degeneration, with polypi and purulent discharge.

The lecturer did not like the term of necrosing ethmoiditis, as used by Woakes, and considered it a hobby. In treatment he advised careful search for the site of disease and removal of the affected area with the curette or probe. In the general discussion which followed, the points made by the lecturer were appreciated and approved.

THE SYMPTOMS AND PATHOLOGICAL CHANGES IN THE UPPER AIR-PASSAGES IN INFLUENZA.

The appointed discussion on this subject was opened in masterly style by DR. J. SOLIS COHEN. The principal changes noted were a lymphoid infiltration of the soft tissues, with its consequences, such a œdema, etc. The disease affects both the lymph-tracts and blood-vessels. He noted one interesting case of an old gentleman with epithelioma of the palate, in which the malignant disease sloughed out and a perfect cure resulted, after an attack of grippe; and another case in which improvement resulted in tuberculosis of the larynx, occurring in an old lady. The influence of an intercurrent acute infection like influenza or erysipelas upon the course of malignant disease or tuberculosis is worthy of study.

USEFUL DEDUCTIONS DERIVED FROM THE STUDY OF A CASE OF CICATRICIAL CONTRACTION OF THE LARYNX POSSESSING UNUSUAL CLINICAL FEATURES, WITH EXHIBITION OF SPECIMEN,

was the title of a paper read by DR. W. C. JARVIS, of New York. It was the result of extensive syphilitic ulceration, and nearly occluded the upper portion of the larynx. The patient had frequent attacks of dyspnœa, but refused tracheotomy, and perished of suffocation.

DR. MORRIS J. ASCH, of New York, read a report of a

CASE OF INTRINSIC EPITHELIOMA OF THE LARYNX,

in which, after a preliminary tracheotomy, the diseased portion was extirpated. The patient subsequently died with la grippe.

THE LARYNGO-TRACHEAL NEOPLASMS OF TUBERCULOSIS,

was the subject of a communication by DR. JOHN N. MACKENZIE, of Baltimore.

THE RADICAL TREATMENT OF NASAL MYXOMATA,

was advocated in a paper by W. E. CASSELBERRY, of Chicago. He advised removal of the base of the growth, including bone, and the use of the galvanocautery to prevent recurrence. Too great interference was deprecated.

THE SURGICAL TREATMENT OF TUBERCULAR LARYNGITIS,

by DR. BRYSON DELAVAN, of New York, was read by title.

THE RELATION OF DISTURBANCES OF THE MUCOUS MEMBRANE OF THE UPPER AIR-PASSAGES TO CONSTITUTIONAL CONDITIONS.

The concluding discussion on this subject was opened by DR. BEVERLY ROBINSON; and a spirited and interesting debate followed.

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VIRCHOW'S SEVENTIETH BIRTHDAY.

PERHAPS in no profession or occupation at the present day, except in medicine, does there exist any one man so pre-eminent that its followers, each and all, would delight in recognizing him as the Master. The physicians throughout the civilized world universally acknowledge that to Rudolf Virchow belongs this title. During the past week two hemispheres have joined in thought, word and deed in celebrating his praise. There seems to have been scarcely any limit to the honors which have been showered upon him in grateful recognition of his efforts for the benefit of humanity. It is especially fitting that the President and medical professors of the Johns Hopkins University, the centre of scientific medicine in this country, should have held a memorial meeting in his honor, and it is with pleasure and thorough sympathy that we place Professor Osler's address before our readers.

Twenty years ago Virchow seemed to us as old as to-day, and to-day he seems as young as twenty years ago. He is certainly one of those exceptionally gifted mortals who, like the gods of old, is always in his prime. We forget, for the moment, that his greatest and most incisive contributions to medical progress were made before he was fifty years old. What he then accomplished was so thorough and so suggestive that it seems almost as if nothing had since been done except to confirm and extend what he then discovered.

Thirty years ago he gave us the cellular pathology, and although bacteriology has since budded and blossomed and became fruitful without his direct aid, its further progress is becoming more and more dependent upon the study of the cells whose importance he so thoroughly realized and whose changes he so keenly followed. He has been, and is, the director and controller of medical progress. Then, by his untiring industry and genius for generalization; now, by his example, incitement and critical wisdom.

How many sided is this great man, appears in Professor Osler's remarks. He has undertaken nothing which has not profited from his labors. A citizen

of whom Berlin is proud, a patriot to whom Germany is much indebted, a physician and man of science whose country is an appreciative world.

What more striking illustration of the fickleness of fortune and the irony of fate than Virchow and Bismarck on the 13th of October, 1891. The former laden, almost overwhelmed, with the gratitude of the world, the latter deprived of honors, his existence barely recognized by the country he unified. The memory of the one will live without blot or blemish, that of the other, though perhaps equally lasting, may be found seamed and scarred by the wounds and blows he inflicted, which posterity may find to have been largely unnecessary.

THE INCREASING IMPORTANCE OF BACTERIOLOGY IN ITS RELATION TO INTERNAL PATHOLOGY.

A person ignorant of the progress which is being made in medicine might obtain a fairly good idea of the growing importance of bacteriology in internal pathology by contrasting standard works published twenty years ago with treatises of to-day. We have, for instance, before us editions of the following text-books bearing date 1871: Niemeyer's "Text-Book of Practical Medicine," Wagner's "General Pathology," Jaccoud's "Traité de Pathologie Interne." In these works one might look in vain for any special chapter devoted to bacteriology, or for any adequate recognition of the relation thereof to etiology. Bacteriology was then only in its embryonic stage. Contrast this with the importance now assigned to this subject in standard treatises. The last edition of Hallopean's "General Pathology," a book of 840 pages, published in 1890, devotes 200 pages under the head of Etiology, to "Animal and Vegetable Parasites," of which the larger part is concerned with "Infectious Bacteria." And now comes the first volume of the very latest "Treatise on Medicine," published under the direction of Charcot, Bouchard and Bressand.[1] This large book of a thousand pages begins with a long introduction by Charrin (Part I), "On General Infectious Pathology"; two hundred and forty pages are devoted to this one etiological subject, and may be regarded as quite a complete treatise on microbiology, in which the principal acquisitions of the last decade or two are grouped in a striking manner. We cannot forbear calling particular attention to the masterly manner in which the following topics are treated in successive chapters: "Microbial Associations — Mixed, Secondary Infections"; "The Microbian Secretions from the Point of View of their Physiological Actions"; "On Immunity"; "On Vaccines."

The advances of the past seventeen years will be recognized when this introduction is contrasted with that of Liebermeister, in the first volume of Zeimssen's Cyclopædia. The latter introduction comprises only thirty-two pages; and while containing much that time has sanctioned and confirmed, the general classification of Liebermeister has proved to be inadequate, and has been abandoned. The word *miasm*, for example, has been found to comprehend the most diverse morbific agents: the hæmatozoa of marsh-poison, the deleterious gases engendered by saprophyte bacteria in cesspools and privies, and the poison contained in the expired air. Hence it has been seriously proposed to expunge this word from medical nomenclature.[2] Nor does the term *miasmatic-contagions*, as applied to typhoid fever and cholera, find much justification in fact; the typhoid bacillus and the comma bacillus are the same contagion in the organism and out of it, only, if we may believe Wood, Pettenkofer and Hueppe, these bacteria may in some circumstances develop in certain external media, an extraordinary vitality and virulence.[3] With regard to the typhoid bacillus, it is true that drinking-water is generally the vehicle by which it obtains entrance into the human organism; it is equally true that water is but an indifferent medium of culture (though the bacillus may long preserve its vitality in water and even in ice), and that there are observations which indicate the communication of the disease (in ten per cent. of the cases, according to Professor Brouardel) by the air of respiration; and the presence of the specific bacilli in the dust of rooms which have been occupied by typhoid patients has been affirmed by Tryde and Salmonsen, by Utpadel and Birsch-Hirschfeld.

Among the recent additions to medical bacteriology may be mentioned: (1) The relationship of angiocholitis to bacilli — the researches of Bouchard, Charrin, Roger, Dupré and others, have shown that angiocholitis with the resulting biliary abscess or hypertrophic cirrhosis is an infectious disease. (2) The determination of the infectious nature of certain acute enterites — the *bacterium coli commune*, the *bacterium lactis aërogenes*, the *bacterium aceti*, the *bacillus of Lesage*, are those to which the principal morbific agency has been assigned. (3) The identification of surgical septicæmia with puerperal septicæmia, and, as far as causation is concerned, with erysipelas, lymphangitis, acute abscess, etc., certain round micrococci being common to them all, and being capable, under proper conditions, of engendering any or all of these affections. (4) The wide range of morbidity attributable to the pneumococcus of Fränkel, which has been held to have not merely a primary part in croupous pneumonia, but also to be mainly responsible for much of the pleurisy, endocarditis, meningitis, otitis, etc., witnessed in connection with pneumonia and influenza. (5) It seems to be agreed among the microbiologists that most of the microbes which cause broncho-pneumonia, bronchitis, infectious laryngitis, etc., are, when we rule out the agents of syphilis, diphtheria, tuberculosis and glanders, such as are met with in ordinary pleurisy *à frigore*, that is, parasites of little specificity, which inhabit normally our cavities in communication with the outer air. It has, for instance, been stated that purulent pleurisy is

[1] Traité de Médecine, Tome I, par MM. Charrin, Legendre, Roger, Chantemesse, Fernand Widal. Paris: G. Masson, 1891.

[2] Vide Hallopean: Pathologie Generale, third edition, p. 173.

[3] Widal: Asiatic Cholera, art., Bacteriology.

dependent on various bacteria, pneumococci, staphylococci, streptococci, etc.

It is needless to dwell again on the work which has recently been undertaken relative to the mechanism of immunity, to the bacterial secretions and their rôle in the symptomatology of the disease, and to that important rôle in morbid processes now assigned to associations of microbes. Nor need one more than allude to the increasing list of harmless microbes which are supposed to become virulent only under certain pathological conditions. Enough has been said to indicate the extent of the investigations in bacterial pathology. The basic facts are now indisputable, and nothing can stay progress in this department; so rapid, in fact, are the changes that text-books and treatises on medicine which three or four years ago were considered "up with the times" already begin to have the mould of age upon them, and need revision and supplementing

The authors of the new French "Treatise on Medicine" realize this fact, and while demurring a little to the statement sometimes made in the way of reproach, that "pathology undergoes renewal every twenty years," they yet point with pride to the fact that during the last twenty years there has been a renaissance of surprising richness, "which has transformed not only the methods, but the very matter of medical teaching."

MEDICAL NOTES.

Influenza. — Outbreaks of influenza are reported from Russia, from England and from Paris.

A Biographical Sketch of Professor Virchow, by Dr. W. Becher, is soon to be published in Berlin.

Famine in Russia. — It is estimated that fourteen million persons in Russia are in need of help on account of the famine. Scurvy and typhus fever are raging in the afflicted districts.

A Prize for an Essay on Demography. — At the recent Congress of Hygiene and Demography it was announced that Dr. Körösi had offered a prize of 1,500 francs for the best work on the subject of demography and its progress in the chief countries of Europe and the United States. Essays, which must be written in English, German, French or Italian, must be sent by January 1, 1894, to the Permanent Committee of the Congress. The name of the author is to be sent with the essay, but in a sealed envelope. The paper will be examined by an international committee of five, elected by the permanent committee. The prize will be awarded at the next meeting of the Congress at Budapesth.

Pan-American Medical Congress. — The Committee on Permanent Organization, appointed at the last meeting of the American Medical Association, met last week in St. Louis, Dr. C. A. L. Reed presiding. The Congress is to meet in Washington on the first Tuesday in October, 1893. Officers were elected as follows: President, William Pepper, M.D., of Philadelphia: Secretary-General, Charles A. L. Reed, M.D., of Cincinnati; Member of International Committee, A. Van der Veer, M.D., of Albany; Treasurer, A. M. Owen, M.D., of Indiana. Trustees and Chairmen of Medical Sections were also elected. The selection of the Vice-presidents, one from each State and Territory, was left for the entire Committee in Detroit, next June, in connection with the meeting of the American Medical Association. The selection of Secretaries for the Medical Sections was left to a subcommittee. The name "Intercontinental American Medical Congress" was dropped, and the name "Pan-American Medical Congress" substituted. It was decided that the regulations governing the Congress be printed in the English, Spanish and French languages. Each section is to have an English-speaking, and a Spanish-speaking secretary. A number of communications were read from physicians of Rio Janeiro, Havana, City of Mexico and from the States of Venezuela, Porto Rico and San Salvador, assuring the committee of the hearty co-operation of the medical fraternity in those countries.

Report of the Surgeon-General of the Army. — In his annual report Surgeon-General Sutherland shows that while the number of sick reports was larger than during the previous year, the number of men constantly sick — 42.71 per 1,000 — compares favorably with 44.12 in the previous year. The cases of treatment of alcoholism numbered 40.73 per 1,000 for the army as against 41.43 in 1889, and 56.68 the average during the previous decade, and in this connection the surgeon-general notes with satisfaction that so many of the larger posts are at the lower end of the list. A great improvement in the diet of the men has been made within the past year. The complaints concerning clothing were not so numerous as heretofore. Treating in detail the subjects of alcoholism the report says, that drunkenness is on the decrease. The colored soldier is seldom on the sick-list from this cause. Every medical officer who refers to the canteen system approves of it, with the exception of one. From Fort Niagara, N. Y., the report comes: "A remarkable change has taken place in the habits of the men as to sobriety since the establishment of the canteens. Signs of intoxication are rarely seen, and the guard-house is without occupants. Nearly all of the other reports are to the same effect; and, on the other hand, the commandant at Fort Leavenworth notes an increase in the number of cases of alcoholism since the sale of beer in the canteen was stopped." The canteen has relieved our military posts of one-third of the cases of alcoholism that formerly tended to the demoralization of the individual, infraction of discipline, assaults, injuries and deaths. In conclusion it is recommended that at each post there be established a systematic course of athletic exercises to improve the physique of the men, as this does not follow from military drills.

The Metric System.— At the quinquennial session of the Geographical International Congress held in Berne, August 10–17, there were about 280 delegates and representatives from all countries. At this Congress was passed the following resolution on August 14th: "The Geographical Congress entreats Englishmen of science to desist in future from the use of their ancient units of weight and measure in scientific and technical publications, and to employ those of the metric system only." This resolution was passed with immense enthusiasm; the applause and cheering lasted for nearly five minutes, and the vote was unanimous. The American Metrological Society has prepared a petition asking Congress to pass the following act: "That on and after July 1, 1893, the metric system of weights and measures authorized by the act of Congress approved July 28, 1866, shall be used exclusively in the customs service in the United States." Such petition the Association desires to circulate widely among those desiring to sign it, and asks each signer to mail it to his representative in Congress. It has also prepared a simple and excellent chart of the metric system which, for educational purposes, it will mail to any one asking for it for the cost price. 10 cents in stamps, to be addressed to the Secretary of the American Metrological Society, No. 41 East 49th Street, New York City. Copies of the petition can be had at the same address.

The Guild of St. Cecilia. — The value of music as a therapeutic process, says the *Lancet*, is about to be tested in London by practical proof. An association has been founded under the title of the Guild of St. Cecilia, which proposes to maintain a staff of skilled musicians who shall exercise their art in the neighborhood of the sick under certain regulations. The instruments to be employed, besides vocal harmony, are the pianette, harp and violin. Hospital patients are to be treated, if required, individually, by telephonic communication. The society will set itself to obtain professional opinions as to the maladies to be thus treated, and to tabulate cases in which benefit has resulted from this novel remedy.

BOSTON AND NEW ENGLAND.

Boston City Hospital. — The Mayor and the members of the City Council will, by invitation of the trustees, visit the Boston City Hospital on Thursday afternoon, October 22d.

Boston Public Baths. — During the past summer the total attendance at the public baths in Boston, which are under the supervision of the Board of Health, was 1,014,788, against 988,078 in 1890. The increase was entirely among the men and boys, the number of women and girls having fallen off. The ratio of the former to the latter was as 83 to 18.

The Firing of Cannon on Boston Common. — In commenting on our note of last week on the discharging of cannon on the Common, a daily paper remarks that something should be excused on the score of patriotism. The whole point of our note appears to have been missed. We have no desire to limit patriotism or the use of gunpowder, but it surely is not essential that the Common should be used. There are plenty of places within a short distance of the city proper where no objection could be raised to as much noise as is necessary to insure the dignity of the State and the preservation of the Union.

The Yale Medical School opened October 14th, with forty men in the entering class. The following appointments have been made: Thomas H. Russell, M.D., professor of clinical surgery and surgical anatomy, Lewis DeForrest, M.D., instructor in clinical medicine, O. T. Osborne, M.D., lecturer on materia medica and therapeutics, Graham Lusk, M.D., instructor in physiology, Charles G. Foote, M.D., demonstrator in bacteriology, Harry B. Ferris, M.D., instructor in anatomy, Joseph Townsend, M.D., assistant in the medical clinic and Robert O. Moody, lecturer on histology.

NEW YORK.

Croton Water. — According to a report just made by Dr. Martin, chemist to the Health Department, the Croton water, as tested by samples taken in the city, now shows a marked improvement in its condition. For the first time in a number of weeks the analysis presents a total absence of any trace of nitrites.

The Results of the Recent Gale. — In consequence of the unusually heavy gales and high seas experienced by the incoming steamers of late, a number of the passengers have been more or less severely injured. On board the *Augusta Victoria* a curious accident happened to a mother and daughter, who were standing together when the ship gave a violent lurch. Each put out her arms to protect herself, and their elbows came together. When they were picked up it was found that the mother's left elbow-joint and the daughter's right elbow-joint were both dislocated.

The Death-Rate. — During the week ending October 3d there was a gratifying decrease in the number of deaths reported from typhoid fever; the number being 11, while the week previous there were 24. In diarrhœal diseases there was a decrease of 26 in the number of deaths, in phthisis a decrease of 30, and in pneumonia a decrease of 14. The total number of deaths reported was 737, or 74 less than the previous week. This represents an annual death-rate of 22.70 per thousand of the estimated population of the city; but the mortality was larger by 31 than the average mortality for the corresponding week during the last five years. The number of births reported during the week was 1,052.

A Case of Hydrophobia is reported from Elizabeth, N. J., in a boy eight years of age, who was bitten by a large Collie dog nearly three months ago. He was so severely lacerated about the head that more than a hundred sutures were required, and he was obliged to remain for nine weeks in the hospital; from which he was only discharged September 27th.

Miscellany.

MASSACHUSETTS MEDICAL SOCIETY.

Councillors' Meeting.

A Stated Meeting of the councillors was held at the Medical Library, Boston, on Wednesday, 7th inst., at 11 A. M. The President, Dr. Amos H. Johnson, in the chair. Eighty-five councillors were present.

The following delegates were appointed to other medical societies:

Vermont, Drs. A. M. Smith, of Williamstown; C. N. Chamberlain, of Lawrence.

New York: Drs. George Haven, of Boston; E. J. Forster, of Charlestown.

New York State Medical Association; Drs. J. T. G. Nichols, of Cambridge; John Homans, 2d, of Boston.

The President stated that he had received from Dr. F. W. Draper his resignation from the office of treasurer. It was subsequently voted to accept the resignation of Dr. Draper; and the following resolution was unanimously adopted:

"That the thanks of the Council be given to Dr. Draper for the admirable manner in which he has performed the duties of his office for the past sixteen years."

Dr. Edward J. Forster, of Charlestown, was elected to succeed Dr. Draper as treasurer.

Dr. Chadwick announced that in his capacity as a committee of one to secure the portrait of Dr. Samuel Danforth, which was bequeathed to the Society by Miss Elizabeth Danforth, he had been successful in his effort, and that the portrait is now in the possession of the Society.

The President offered obituary notices of Drs. William Cogswell, George H. Lyman, Peter Pineo and David Humphreys Storer.

HARVARD MEDICAL SCHOOL ASSOCIATION.

The Harvard Medical School Association had its origin in a meeting held November 26, 1890, at the call of Dr. J. R. Chadwick, of Boston. The feeling of the few gentlemen present was strongly in favor of the formation of such an association, and a Committee of Organization was appointed consisting of Dr. J. R. Chadwick, of Boston; Dr. F. H. Brown, of Boston; Dr. H. P. Bowditch, of Boston; Dr. G. E. Francis, of Worcester, and Dr. Lincoln R. Stone, of Newton. This Committee reported at a meeting held on April 30, 1891, at which a constitution was adopted and the following officers were elected:

President, J. R. Chadwick, of Boston. Vice-presidents, J. O. Webster, of Augusta, Me.; Chas. P. Bancroft, of Concord, N. H.; A. H. Johnson, of Salem, Mass.; V. O. Taylor, of Providence, R. I.; F. R. Sturgis, of New York; Robt. T. Edes, of Washington, D. C.; James W. Flint, U. S. Navy, Washington, D. C.; W. A. Haskell, of Alton, Ill.; Chas. E. Briggs, of St. Louis, Mo.; G. H. Powers, of San Francisco, Cal. Secretary, R. W. Lovett, of Boston. Treasurer, Walter Ela, of Cambridge, Mass. Councillors, G. E. Francis, of Worcester; L. R. Stone, of Newton; C. F. Folsom, of Boston; W. S. Bigelow, of Boston; F. M. Weld, of Jamaica Plain; S. D. Presbrey, of Taunton; E. Wigglesworth, of Boston; A. Worcester, of Waltham; J. T. G. Nichols, of Cambridge; F. H. Brown, of Boston; C. C. Tower, of Weymouth; C. G. Carlton, of Lawrence.

The first annual meeting of the Association was held at the Harvard Medical School, Tuesday, June 23, 1891. Dr. J. R. Chadwick, the President, presided, and it was voted that the officers elected at the last special meeting should hold over to the next annual meeting. The following honorary members were elected:

Dr. R. T. Davis, of Fall River; Dr. D. H. Storer, of Boston; Prof. G. L. Goodale, of Cambridge; Dr. H. I. Bowditch, of Boston; Dr. G. C. Shattuck, of Boston; Dr. G. H. Lyman, of Boston; Dr. H. P. Walcott, of Cambridge, and Dr. B. E. Cotting, of Roxbury.

A resolution was adopted petitioning the Board of Overseers of Harvard College to give the graduates of the professional schools the right of suffrage for overseers. Dr. Walter Ela, of Cambridge, the treasurer of the Association, read a report showing a balance of $957.91 in the treasury.

The dinner at the Vendome took place at 2 o'clock. The President of the Association, Dr. J. R. Chadwick, sat at the head of the table, and acted as presiding officer and toast-master. He read letters of congratulation from Dr. Oliver Wendell Holmes, Dr. D. H. Storer, Dr. George C. Shattuck and others. After-dinner addresses were made by Dr. F. R. Sturgis, of New York, and Dr. R. T. Davis, of Fall River, whose subject was "The Good of the Order"; Dr. Walcott, who made an able address on the university; Dr. H. P. Bowditch, who spoke for the medical school, and Dr. George B. Shattuck for the overseers.

A report of the committee on the Harvard Medical School was read by Dr. J. T. G. Nichols, of Cambridge.

All graduates of the Harvard Medical School who have not yet received invitations to join the Association are requested to send their names and addresses to the secretary, Dr. Robert W. Lovett, 379 Boylston St., Boston.

THE ANTISEPTIC ACTION OF SALOL.

As the results of a series of experiments with salol, Dr. F. Papuli arrives at the following conclusions:[1]

Salol has pronounced antiseptic properties, especially against certain micro-organisms. Its antiseptic action is due to its decomposition, which is produced by the micro-organisms themselves. All micro-organisms decompose it; but, those which decompose it the most actively lose their vitality, while those which only partly act upon it become attenuated and, finally, those which influence it but slightly remain active.

Finally, salol has an important influence upon suppuration. Although this was well known in medical practice, as, for example, in cystitis and pyelitis, as well as in surgery, these experiments would seem to present a clear explanation of its favorable action. While all the writers in their publications speak in general of an antiseptic action and Gratzer of a detersive and exsiccating influence, from experiments, one comes to the conclusion that the antiseptic action of salol upon suppuration consists in the property which pyogenic micro-organisms have in decomposing it and remaining inactive after its decomposition. Its action upon the surfaces of wounds may be considered as

[1] Annals of Surgery, August.

double; the salol in the inferior stratum decomposes and renders the cause of suppuration powerless; while, in the superior, salol being like iodoform insoluble, it protects the wound from external agents, remains unaltered in the secretions of the wound while those secretions which contain micro-organisms are disinfected.

THERAPEUTIC NOTES.

To Prevent Cocaine Intoxication. — Parker[1] has discovered that the unpleasant or even poisonous symptoms which occasionally follow the local application of strong solutions of cocaine in the nasal and buccal cavities may be entirely prevented by combining the drug with resorcin. This combination is also of advantage in utilizing the antiseptic, astringent and hæmostatic properties of the latter drug.

Wickersheimer Preservative Fluid. — This preparation is made as follows:[2]

℞	Alum	100 parts.	
	Salt	25 parts.	
	Saltpetre	12 parts.	
	Potash	60 parts.	
	Arsenious acid	10 parts.	
	Boiling water	3,000 parts.	M.

After dissolving, cool and filter.

To ten parts of this solution are added four parts of glycerine and one of methyl alcohol. If preparations are to be preserved dry, they should be soaked in the fluid for from six to twelve days, according to their size, and dried without heat.

Potato Treatment. — Dr. J. Solis-Cohen[3] reports a case in which a dental clasp, a body of very irregular shape, was swallowed. The patient was ordered to feed exclusively upon buttered mashed and roasted potatoes, and to examine his stools carefully for the foreign body. Within forty-eight hours the patient voided it, thoroughly coated with potato, to free it from which several washings were required. The author remarks that — had this very irregular body been found impacted in the œsophagus, the same treatment would have been pursued in preference to the infliction of injury upon the œsophagus in efforts at forcible extraction.

Pichi (*Fabiana imbricata*) is a plant from Chili, and was brought to the notice of the profession by M. L. Boyer, in France, in 1886, for the treatment of cystitis and urinary affections. M. de Laval[4] advises the use of a fluid extract made from the young twigs of the plant, and not, as used by the natives, an infusion of the woody portions, which is much less active. For cystitis the following formula is recommended (in cases of Bright's disease it is contra-indicated):

℞	Ext. pichi fluid	ʒ i.	
	Potassii nitratis	ʒ i.	
	Syr. simplicis	ʒ iij.	M.

Sig. A teaspoonful every three hours.

Antipyrin in the Incontinence of Urine in Children.[5] — Antipyrin is put forward by M. Gundez, who claims for it a place amongst the best of remedies in the therapeutics of this troublesome and common affection. He administers it in wafers containing from seven to fifteen grains, or in a mixture. This latter may have from twenty to sixty grains, according to the age of the child, to be taken in divided doses with two hours' interval. He found that a child who took the last dose at 8 P. M. would not micturate before 5 A. M.; while if taken later, between 9 and 11 P. M., the incontinence was often entirely suppressed, even in the second half of the night. In cases where the antipyrin treatment was successful, the improvement was manifest early; but it is advisable that it be kept up for at least fifteen days. The sensibility of children to the action of antipyrin is variable. Some who are not affected by twenty or thirty grains are cured by sixty grains. Sometimes the incontinence will return, in which case the dose should be increased and the drug long continued. Antipyrin is well borne by children, as a rule.

Chloride of Methyl as a Local Anæsthetic. — Berezovsky[6] describes experiments made with a spray of this substance, and concludes that the chloride of methyl spray can be employed in all cases where an ether spray is used as a local anæsthetic; and that the former should be preferred to the latter, since it induces anæsthesia much more quickly than ether spray, it is uninflammable, and hence can be safely employed in cases of cauterization, etc.; it does not undergo any change from exposure to light or air; it does not irritate mucous membranes even in children; and it is cheaper than ether, since only very small quantities are required.

[1] British Medical Journal.
[2] Deutsche Med. Woch., July 23d.
[3] Medical News, August 8th.
[4] La Semaine Médicale, July 1.
[5] Lancet, August 8.
[6] Letopis Khirürgitcheskaho Obshtchestva V'Moskve, December, 1890.

RECORD OF MORTALITY

For the Week ending Saturday, October 3, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	737	366	23.24	10.18	12.60	1.54	5.46
Chicago	1,099,850	418	205	35.28	7.20	15.12	12.48	3.84
Philadelphia	1,046,964	—	—	—	—	—	—	—
Brooklyn	806,343	382	203	25.65	9.18	14.58	2.43	5.13
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	201	83	15.68	10.29	9.80	2.94	.98
Baltimore	434,439	169	74	24.19	8.85	12.39	2.36	5.90
Cincinnati	296,908	88	36	22.80	13.68	7.98	1.14	9.12
Cleveland	262,000	99	32	14.28	6.12	6.12	4.08	2.04
New Orleans	242,039	—	—	—	—	—	—	—
Pittsburg	240,000	111	54	36.90	2.70	16.20	9.00	9.90
Milwaukee	240,000	82	45	28.29	9.84	19.68	2.46	6.15
Washington	230,392	96	35	14.56	13.52	5.20	2.08	4.16
Nashville	76,168	29	9	13.80	26.60	10.35	—	—
Charleston	65,165	26	8	11.55	7.70	3.85	3.85	—
Portland	36,425	12	7	25.00	8.33	16.66	—	—
Worcester	84,655	30	15	23.33	13.33	13.33	3.33	3.33
Lowell	77,696	31	19	25.84	12.92	25.84	—	—
Fall River	74,398	—	—	—	—	—	—	—
Cambridge	70,028	21	7	9.52	28.56	9.52	—	—
Lynn	55,727	23	13	26.10	26.10	26.10	—	—
Lawrence	44,654	19	8	31.56	10.52	10.52	5.26	15.78
Springfield	44,179	23	14	34.80	—	17.40	—	17.40
New Bedford	40,733	16	8	31.25	6.25	25.00	—	—
Salem	36,801	10	2	20.00	—	10.00	10.00	—
Chelsea	27,909	10	6	30.00	10.00	20.00	10.00	—
Haverhill	27,412	8	2	12.50	12.50	—	—	12.50
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	15	5	26.66	6.66	26.66	—	—
Gloucester	24,651	6	2	—	—	—	—	—
Newton	24,379	6	2	16.66	—	—	16.66	—
Malden	23,031	5	3	—	20.00	—	—	—
Fitchburg	22,037	—	—	—	—	—	—	—
Waltham	18,707	4	2	50.0	25.00	50.00	—	—
Pittsfield	17,281	4	2	25.00	—	25.00	—	—
Quincy	16,723	6	2	—	33.33	—	—	—
Newburyport	13,947	4	1	25.00	—	—	25.00	—
Medford	11,079	4	0	25.00	—	—	25.00	—
Hyde Park	10,193	—	—	—	—	—	—	—
Peabody	10,158	—	—	—	—	—	—	—

METEOROLOGICAL RECORD,

For the week ending October 4, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
M..28	30.27	73	81	64	88	82	85	S.W.	S.W.	6	7	O.	C	
T..29	30.09	73	80	66	84	91	88	S.W.	S.W.	15	12	C.	F.	.01
W.30	29.35	60	65	55	55	65	60	N.W.	E.	16	3	C.	C.	.01
T.. 1	29.51	55	62	48	68	69	68	N.E.	S.E.	7	6	C.	C.	
F.. 2	29.53	61	73	49	89	87	84	W.	S.W.	12	11	C.	C.	
S.. 3	29.65	67	84	56	81	88	84	W.	S.W.	11	8	C.	C.	
S... 4	29.82	67	75	59	83	100	92	W.	E.	4	7	C.	G.	†
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 10, 1891, TO OCTOBER 16, 1891.

CAPT. JOHN M. BANISTER, assistant surgeon, U. S. A., granted leave of absence for four months.

FIRST LIEUT. WILLIAM N. SUTER, assistant surgeon, U. S. A., granted leave of absence for one month, to take effect on or about October 15, 1891.

FIRST LIEUT. WILLIAM N. SUTER, assistant surgeon, U S. A. is relieved from duty at Fort McKinney, Wyo., and ordered to Fort Grant, Ariz., for duty.

FIRST LIEUT. HARLAN E. MCVAY, assistant surgeon, U. S. A., is relieved from duty at Fort Mackinac, Mich , and ordered to Fort Wingate, New Mexico.

FIRST LIEUT. JAMES D. GLENNAN, assistant surgeon, U. S. A., is relieved from duty at Fort Riley, Kan., and ordered to Camp Oklahoma, Oklahoma Territory.

FIRST LIEUT. MERRITTE W. IRELAND, assistant surgeon, U. S. A., is relieved from duty at Jefferson Barracks, Mo., and ordered to Fort Riley, Kan.

CAPT. ROBERT B. BENHAM, assistant surgeon, U. S. A., is relieved from duty at Fort Hamilton, N. Y., and ordered to Mount Vernon Barracks, Ala., for duty.

CAPT. CHARLES M. GANDY, assistant surgeon, U. S. A., is relieved from duty with Army Medical Board, to take effect on its final adjournment, and ordered to Fort Yellowstone, Wyo.

CAPT. GEORGE T. BEALL, medical storekeeper, U. S. A., granted leave of absence for one month; during absence of Captain Beall, CHAS. B. EWING, assistant surgeon, U. S. A , attending surgeon, St. Louis, Mo., will take charge of the Medical Purveying Depot in that city.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING OCTOBER 10, 1891.

VANSANT, JOHN, surgeon. Granted leave of absence for twenty-three days. October 8, 1891.

LONG, W. H., surgeon. Granted leave of absence for thirty days. October 7, 1891.

HAMILTON, J. B., surgeon. To represent the Service at the meeting of the Mississippi Valley Medical Association. October 2, 1891.

GASSAWAY, J. M., surgeon. Leave of absence extended five days. September 28, 1891.

WHEELER, W. A., passed assistant surgeon. Granted leave of absence for thirty days. October 7, 1891.

PECKHAM, C. T., passed assistant surgeon. To represent the Service at the meeting of the Mississippi Valley Medical Association. October 2, 1891.

BRATTON, W D., passed assistant surgeon. Granted leave of absence for thirty days. October 7, 1891.

PETTUS, W. J., passed assistant surgeon. To proceed to Norfolk, Va., for temporary duty. October 2, 1891.

MAGRUDER, G. M., passed assistant surgeon. Granted leave of absence for twenty days. October 7, 1891.

WOODWARD, R. M., passed assistant surgeon. Granted leave of absence for thirty days. October 6, 1891.

VAUGHAN, G. T., assistant surgeon. Granted leave of absence for thirty days. October 6, 1891.

COBB, J. O , assistant surgeon. To proceed to Buffalo, N. Y., for temporary duty. October 7, 1891.

GUITERAS, G. M., assistant surgeon. To proceed to Mobile, Ala., Pensacola and Mullet Key, Fla., on special duty. October 10, 1891.

BROWN, B. W., assistant surgeon. To report to the Medical Officer in Command, San Francisco, Cal., for duty. October 3, 1891.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 17, 1891.

A. F. MAGRUDER, surgeon, ordered to the "Boston."

W. S. DIXON, surgeon, detached from the "Boston," and granted leave for two months.

E. H. MARSTELLER, passed assistant surgeon, ordered to special duty, Baltimore, Md.

N. H. DRAKE, passed assistant surgeon, detached from "Albatross," and granted leave for two months.

F. W. F. WIEBER, passed assistant surgeon, detached from the "Pensacola," and ordered to the "Albatross."

GEORGE P. BRADLEY, surgeon, detached from Naval Hospital, Chelsea, Mass., and ordered to the Receiving-ship "Wabash."

F. G. BRAITHWAIT, assistant surgeon, detached from "Wabash," and ordered to Naval Hospital, Chelsea, Mass.

H. G. BEYER, passed assistant surgeon, ordered to Naval Academy, Annapolis, Md.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held on Monday, October 26, 1891, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Dr. A. T. Cabot, "Surgery and Anatomy of the Ureters"; Dr. F. S. Watson, "Stricture of the Ureters." Dr. Watson will also report a case illustrating the advantage of repeated suprapubic puncture as compared with catheterization for the relief of chronic retention of urine due to hypertrophy of the prostate.

G. G. SEARS, M.D., *Secretary*.

MASSACHUSETTS MEDICAL BENEVOLENT SOCIETY. — This Society will hold its annual meeting on Thursday, October 29th, at half-past eight P.M., at the house of Dr. H. W. Williams, 15 Arlington Street.

Any nominations for membership should be sent to Dr. R. Amory, Secretary, 279 Beacon St., before the day of the meeting.

THE BULLARD FELLOWSHIPS IN THE HARVARD MEDICAL SCHOOL.

We called attention in our issue of June 4, 1891 (p. 567), to the establishment, by Mr. W. S. Bullard, of Boston, of three fellowships of $5,000 each in the Harvard Medical School. The income derived from one or all of these fellowships may be paid to any student or member of the medical profession who shall be selected by the Faculty of the Medical School, to make such original investigations in medical science as in their opinion will be most useful to the profession and the community.

A committee of the Faculty having the matter in charge is now ready to receive applications from persons desiring to become candidates for these fellowships. Applicants should address Dr. C. F. Worcester, Secretary, Harvard Medical School, and should state the nature of the investigation which they intend to undertake, and their qualifications for carrying it on.

APPOINTMENTS.

F. E. CHENEY, M D , has been appointed clinical instructor in ophthalmoscopy in the Harvard Medical School.

J. C. CARDWELL, M.D., has been appointed instructor in physiology in the Harvard Medical School.

BOOKS AND PAMPHLETS RECEIVED.

Versuche über das Diuretin "Knoll." Von Dr. Sigmund Pfeffer. Wien. Reprint 1891.

Evidences of the Communicability of Consumption. By G. A. Heron, M.D., F.R.C.P., Physician to the City of London Hospital. London: Longmans, Green & Co. 1890.

A Text-Book of Physiology. By M. Foster, M A., M.D., LL. D., F.R S., Professor of Physiology in the University of Cambridge. Fourth American, from the fifth English edition. Philadelphia: Lea Brothers & Co. 1891.

Address.

RUDOLF VIRCHOW, PATHOLOGIST.[1]

BY WILLIAM H. WELCH, M.D., BALTIMORE,
Professor of Pathology, Johns Hopkins University.

It is fitting that of Virchow's manifold activities that side which represents nearly fifty years of academic work should be a special theme upon this occasion. My contribution, therefore, will relate only to Virchow, the pathologist, the broad view of his career and work in other departments having already been presented to you.

It is as an investigator and teacher of pathology that Virchow ranks as one of the great reformers in medicine.

To appreciate the character and extent of an advance made by scientific discovery, it is necessary to know something about the ideas which have been displaced or overthrown by the discovery. The younger generation of students are in danger of forgetting that facts which are taught to them and which seem to them the simplest and most natural, may have cost years of patient investigation and hard controversy, and possibly have taken the place of doctrines, very different or even contradictory, which long held sway, and which seemed to other generations equally simple and natural. If then, we wish to understand the nature and extent of the reforms in pathology, which we owe to Virchow, we must consider the condition in which he found medicine, and more particularly pathology, in the fourth decade of this century, when he began his scientific work.

At that period medicine in one country was much less influenced by its condition in other countries than is the case at the present time. Medical journals and other means of interchange of ideas were fewer then than now. Medicine was more distinctly national, less cosmopolitan, than it is to-day.

France unquestionably held the leading position in medicine during the early part of this century. The first three decades mark the most splendid period of French medicine. At the very beginning of the century Bichat laid the foundations of general anatomy by his studies of the tissues. He opened the way for the study and classification of morbid changes according to the tissues affected. This is in some respects the most important contribution to pathological anatomy from the time of Morgagni to that of Virchow. Morgagni showed that the purpose of pathological anatomy is not simply the collection of curious and interesting cases, but is to teach us the seats of disease as is indicated by the title of his great work, "De Sedibus et Causis Morborum per Anatomen Indagatis." He, however, was not able to trace the seats of disease further than to the organs affected. Bichat took a long step forward when he substituted the tissues composing the organs, as the seats of morbid changes, and in this particular direction no distinct advance in pathological anatomy was made for fifty years, when Virchow taught us to go still further back than the tissues, to seek in the cells the seat of disease.

But so far as the gross appearances of diseased organs and tissues are concerned, pathological anatomy was most enthusiastically cultivated in France, and this, together with the development of the methods of physical diagnosis by percussion and auscultation, was made the basis of a new clinical medicine by such men as Corvisart, Lænnec, Bayle, Piorry, Louis, Andral. The sound and healthy traditions of this French clinical medicine of the first third of the century, have been continued to the present day, and were early brought to our own country by distinguished pupils of Louis and Trousseau. But the studies in pathological anatomy were fruitful only in certain directions, mainly in diseases of the heart and lungs, and in the elucidation of typhoid fever. They were pursued by clinicians chiefly as a basis of clinical diagnosis. False and exaggerated ideas as to the kind of knowledge to be derived from pathological anatomy, led to the establishment of unfounded systems of medical doctrine, such as that of Broussais, regarding irritation and gastro-enteritis, so fatal in its practical consequences. The use of the microscope was even decried by some of the leading pathological anatomists, and when employed led to little of any value. Pathological histology did not exist. Experimental physiology was developed, one can almost say, was originated, by Magendie, but the importance of experiment and clinical observation for the development of pathological physiology, was not generally recognized.

In Great Britain there existed the fructifying influence of the name and teachings of that great investigator in pathology, John Hunter. In some respects Virchow is to be regarded as the immediate successor of John Hunter in the history of pathology, although his work began fifty years after Hunter's death. Both men discarded philosophical speculation and went back to nature, to observation, to experiment for facts on which to build their doctrines. Both made use of all allied sciences at their disposal, of anatomy in the broadest sense, of physiology, in their investigations, but of course much more was available for the later investigator. Both kept constantly in view the problems of practical medicine, together with the broadest interests and direct participation in science. Both recognized pathological physiology as the foundation of scientific medicine and that this is to be constructed not from anatomical investigations alone, but with the aid of physiology, of experiment and of clinical observation. Hunter was the first to give a broad scientific basis to surgery. Virchow took up many problems just where Hunter had left them. The time had come when he could build deeper and stronger and broader on the foundations of scientific medicine.

In the year of John Hunter's death, his nephew, Matthew Baillie, published his work on "Morbid Anatomy," which is the first one based upon independent systematic observations. The plain, purely objective descriptions, free from the prevailing tendency towards unwarranted generalizations, have given a permanent value to this work. Sound observations continued to be made by such men as Abernethy, the Bells, Abercrombie, Cooper, Howship, Monro, Addison, Gulliver, Bright, Hope, Carswell, but much as they enriched the storehouse of pathological anatomy, the fundamental principles of pathology remained the same, although commendably free from many of the speculative tendencies of the Continent.

It was in the third and fourth decades that the great Vienna school of pathology came to the front under Rokitansky and Skoda. As a purely descriptive path-

[1] Address delivered at a meeting of the Johns Hopkins University, Baltimore, to celebrate the Seventieth Birthday of Professor Virchow, on October 13, 1891.

ological anatomist, Rokitansky is the greatest who ever lived. The General Hospital of Vienna afforded him an enormous material for observation. When he retired from his professorship at the age of seventy years, he is said to have possessed over 100,000 protocols of autopsies made by himself or his assistants. The industry, acuteness of observation and purposeful character of his work are marvellous. His descriptions of the gross appearances of diseased conditions serve now and will probably continue to serve for a long time as models of clearness, accuracy, conciseness and vividness. As Virchow has said, he is for pathology what Linnæus is for botany. But in the interpretation of the morbid changes which he described so objectively and in the deduction of general pathological principles, Rokitansky was singularly unfortunate. His attempt to construct out of pathological anatomy a general pathology or pathological physiology, is a lamentable failure in the first edition of his great work on Pathological Anatomy. Bound in the trammels of humoral pathology, he elaborated his doctrine of crases which was at first received so enthusiastically by his followers. It is fair to say that no one was more open to conviction by facts than Rokitansky, and that he threw overboard his whole complicated system of crases after the destructive criticism which it received from Virchow. It was mainly by the teachings of Rokitansky and of his pupil, the great clinician, Skoda, that the nihilistic school of therapeutics developed and dominated for so many years the Vienna school of medicine. With their attention fixed continually upon the post-mortem table and the gross anatomical changes produced by disease, these observers could not comprehend how such changes are amenable to treatment, and they fell into the error of those who make pathological anatomy the exclusive basis of clinical medicine. Those who do this forget that the changes found in the dead organ give only partial, although valuable, information as to the process of disease in the living organ, as to remote effects upon other parts of the body, as to causes of disease, as to disturbances of function.

In Germany proper medicine presented in the early part of this century a less edifying spectacle than in the other countries mentioned. Although in this period work of fundamental importance was done in allied sciences, such as comparative anatomy and embryology, medicine presented a succession of systems and schools of doctrine founded largely on speculation. The minds of physicians were possessed by such doctrines as those of vitalism, of Brownianism, of the philosophy of nature. Here and there a good observer in pathological anatomy such as J. F. Meckel and Lobstein or an enlightened physician stands out in contrast to the dominant speculations, hypotheses and mysticism. The controversy, centuries old, as to whether disease affects primarily the solids or the fluids was still kept up with fruitless dialectics. A healthier direction was given to clinical medicine by the teachings of Schönlein, but he did not break with the prevailing ontological conception of disease as an entity, as something apart which enters the body and lives there like a parasite. Medical works published in Germany as late as the fourth decade of this century are still full of such terms as "natur-philosophische, natur-historische, rationelle, physiologische" systems of medicine, to say nothing of the ultramontane, theological system of the professor of medicine in Munich.

In the third decade discoveries in microscopical anatomy were made, surpassing in number and importance all which had come before, and forming the basis of modern histology. In Johannes Müller's work "On the Intimate Structure and the Forms of Morbid Tumors" published in 1838, we meet the first fruitful application of the microscope to the study of pathological anatomy, and this work may be regarded as the beginning of pathological histology in the modern sense. In the same year Schwann promulgated the cell theory as applied to animals. The fundamental error of Schwann as to the origin of cells by spontaneous generation out of a primitive blastema exerted, for many years, an unfortunate influence upon pathology and led many a good investigator to spend his force in a will-o'-the-wisp search for the development of cells out of unformed material. The blastema theory for a time dominated pathology. The plastic substances of John Hunter, various pathological exudates were resolved to a large extent into blastemata and the problems which seemed most urgent were to determine the characters of these blastemata, their metamorphoses and the exact mode of formation of cells out of them; and to these delusive problems microscopists set themselves to work.

Surrounded by such ideas in the year 1844, one year after his promotion to the doctor's degree, Virchow began his work first as assistant and then as prosector in the Charité Hospital in Berlin. He must have received more inspiration from Johannes Müller, the greatest physiologist of the first half of this century in Germany, than from any other of his teachers, but he has acknowledged his indebtedness also to Schönlein, that remarkable man, who, without having ever published half-a-dozen pages after his graduating dissertation, became the most popular, influential and inspiring clinical teacher in Germany. Doubtless many an impulse must have come from association with that company of ardent young investigators in medicine assembled in Berlin in the early forties, from such men as Franz Simon, Reinhardt, Leubuscher, Joseph Meyer, Remak, Traube, DuBois-Reymond, Brücke, Helmholtz. The spirit of reform was no less in the medical than in the social and political atmosphere of the time. All of these influences of his teachers, of his co-workers, of the "Zeitgeist" must have had their effect upon the young man, but, from the beginning, Virchow's published work marked him as an original and independent genius.

In 1846, at the age of twenty-five, Virchow read before the Society for Scientific Medicine in Berlin the paper entitled "Concerning Points of View in Scientific Medicine," which was soon after published as the leading article in the first volume of the *Archive for Pathological Anatomy and Physiology and for Clinical Medicine*, founded by himself and Reinhardt. This short article is in a sense the programme of the author and of the journal in which it appeared. Here is emphasized the idea that disease is not an independent being, but is life under changed conditions. Scientific medicine is the investigation of these changed conditions and of the means of removing them. Halt is called to dogmatism and speculative systems of medicine. The limits of pathological anatomy are determined. The methods of investigation and the assistance of other natural sciences must be employed in medicine. Progress can come only by experiment and observation. The immediate task is to discard

philosophical systems and to set to work in collecting facts. Permit me to quote the last paragraph of this remarkable article:

"Let us not deceive ourselves about the condition of medicine. Minds are unmistakably exhausted by the many hypothetical systems again and again cast aside only to be replaced by new ones. A few more invasions perhaps and this time of unrest will have passed by and it will be recognized that only quiet, industrious and persevering work, the true work of observation or experiment, possesses enduring value. Pathological physiology will then gradually be developed, not as the production of a few heated brains, but as the work of many patient investigators; that pathological physiology, which is the citadel of scientific medicine, of which pathological anatomy and the clinic are only out-works."

Brave words and true are these uttered by a young physician only three years after receiving his doctor's degree, words significant now, but many times more significant when they were spoken. But they were not the words of a dreamer or an idle talker. He who wrote them had already begun that "quiet, industrious and persevering work, the true work of observation and experiment," which was destined to introduce a new epoch in the history of medicine.

By a fortunate chance Robert Froriep assigned to his young assistant as a theme for independent investigation, the study of phlebitis. It would lead too far into historical detail for me to attempt to explain the position which phlebitis then occupied in pathology. Some idea may be gathered from Cruveilhier's sentence, *La phlébite domine toute la pathologie.* So firmly established at that time was Cruveilhier's doctrine that the essence of inflammation is coagulation of the blood in the veins and capillaries, that it seemed necessary to work out only certain details, such as, whether or not in suppurative phlebitis the pus is secreted by the wall of the vein. But it at once became clear to Virchow that the general doctrine rested upon no sure foundations and it was upon the foundations of the doctrine that he began to work. His preliminary studies were upon the morphology and chemistry of fibrin and the conditions for its coagulation both within and outside of the body. At the same time his attention was turned to the morphological elements of the blood, more particularly the white blood corpuscles, and here his observations on leukæmia opened new points of view on the nature and origin of the white corpuscles, so that in 1846, he could say, "Herewith I vindicate for the colorless corpuscles of the blood a place in pathology." His powers of critical analysis and correct interpretation of pathological facts were at this time brilliantly exhibited in the view which he took as to the nature of leukæmia, the same view essentially which is still held, in contrast to Bennett's conception of the disease as an hæmitis, a suppuration of the blood. But it was in the epoch-making articles on "Plugging of the Pulmonary Artery and its Results" (1846 and 1847) and on "Acute Inflammation of the Arteries" (1847), that the best fruits of Virchow's studies of subjects suggested by phlebitis appeared. Here, for the first time, was there a clear insight into an important group of pathological facts which had been the favorite study of John Hunter and which had exercised the minds of the succeeding generation of pathologists. The doctrine of thrombosis and embolism as it was here and subsequently elaborated by Virchow formed virtually a new chapter in pathology, well rounded as it left the hands of its founder, a monument of brilliant scientific investigation in pathological anatomy and experimental pathology. The important articles on "Pathological Pigments," and "The Pathological Physiology of the Blood" belong also to the same period and the same line of investigation. The fundamental part of these researches, together with investigations in many other directions in pathology, belong to the first Berlin period of Virchow's activity (1844–1849).

The Würzburg period, extending to 1856, was one of great and fruitful scientific work. Already in Berlin, by his investigation of degenerative cellular changes in Bright's disease and of inflammation of muscle, Virchow had reached new views as to the nutritive alterations of cells in inflammation; but it was in Würzburg especially that his doctrine of inflammation, which has exerted such a reformatory influence upon pathology, was worked out by himself and his pupils. In the article on "Parenchymatous Inflammation" (1852), and in that of the same year on "Units of Nutrition and Localizations of Disease," he has already conquered a large tract of cellular pathology. He has a firm grasp upon the nutritive and functional disturbances of cells. Further researches were necessary to reveal clearly their formative activities. In the light of the most recent views concerning inflammation, it is significant to note that in the first of these articles Virchow clearly recognizes suppuration as secondary to necrosis of tissue, and in this connection says, "Here there is certainly an inner, parenchymatous process, and if the subsequent suppuration be regarded as the outcome of inflammation, one need not hesitate to regard the degeneration of the parenchyma as an integral, neither consecutive nor accidental, part of the inflammatory process." And again at the close of the article, "not hyperæmia and not exudation, nor redness, nor swelling, nor pain, do I put first, although I recognize their importance, but degeneration — I vindicate, therefore, before all for inflammation the character of degeneration."

But the brightest lustre of this period of Virchow's scientific work comes from those investigations which laid the foundations of cellular pathology. Like all of his contemporaries, Virchow at the beginning was under the dominion of Schwann's theory as to the spontaneous origin of cells from blastema. His researches upon the origin and structure of the connective-tissue group of substances, published in 1850, were reformatory for both pathological and normal histology. There followed a series of investigations which laid broad and firm the foundations of cellular pathology. Already in 1854 Virchow cast aside definitely the blastema theory of cell formation.

To describe further in detail these and the other investigations of Virchow in pathology up to the present time is impossible within the limits of an address. To do this would require a book covering nearly the whole ground of pathology. Into what corner of special pathological anatomy and of general pathology should we not be led if we attempted to follow the many hundred articles which he has written on these subjects? We cannot include here the consideration even of such a monumental work as that which he has written upon tumors.

I must content myself in the limited time remaining by directing your attention to a few salient points in-

tended especially to show the reformatory character of Virchow's work in pathology.

In his beautiful oration on Johannes Müller, Virchow says, "There is no school of Müller in the sense of dogmas, for he taught none, but only in the sense of methods." The same may be said of Virchow's school. His school means not the propaganda of certain dogmas as meant the schools of the great leaders in medicine of olden times. It is the method and not dogma which characterizes it, and the method is that of the natural and physical sciences. In 1849, in the article on "The Scientific Method and Points of View in Therapeutics," Virchow wrote: "In fact, that is true which Asclepiades of Bithynia, the father of that old school of methodistic physicians, emphasized; the method of investigation is that which is essential and determining. It is the method which distinguishes the Harveys, the Hallers, the Bells, the Magendies, and the Müllers from their smaller contemporaries. This is the soul of the natural sciences."

Observe; experiment; seek the aid of allied sciences, chemistry, physics, general biology; collect by systematic and purposeful investigation, in which the "Frage-Stellung" is correct and clear, a body of facts, and from them deduce general pathological principles and laws. It is along these lines that Virchow has worked and taught. The proper uses of hypotheses in scientific investigation he has always recognized; but important as are these uses, hypotheses are not to serve as the foundation of pathological doctrines. His early opponents, the adherents of the philosophy of nature and the so-called rationalists, accused him of leading medical science into the barren collection of facts, of letting the broad river of science waste itself in countless little streams. But both by precept and example no one has demonstrated more clearly than Virchow that the scientific mind, in the investigation of details, should not lose sight of the higher aims, the orderly classification of the facts, the search after new and loftier points of view, the establishment of general principles and laws.

This method of investigation is none other than the Baconian. Virchow did not originate it. Many before him had recognized its importance, and had applied it to medicine. Before Virchow it had already become the powerful lever of comparative anatomy, embryology and physiology. But one purpose of the historical remarks with which I began this address was to show that in pathology this method had not gained full sway when Virchow's work began, and that speculation and the construction of philosophical systems of medicine based upon speculation, were still in vogue. The application of the scientific method to pathology could not have been long delayed, but to Virchow more than to any other man belongs the credit of introducing into pathology the scientific method of investigation by the employment of which this department of knowledge has gained its rank as one of the natural sciences.

It is another great merit of Virchow to have made clear the kind of knowledge to be gained by the study of pathological anatomy. In the enthusiasm of the rapid development of pathological anatomy in the early part of this century, false and exaggerated ideas were entertained as to the relations between this subject and practical medicine and as to the kind of information to be derived from the examination of diseased organs after death. The attempt was made to construct out of pathological anatomy alone, systems of pathological physiology. This led in France to such exclusive systems as Broussaisism and in Vienna to the craseological system of Rokitansky and to the nihilistic school of therapeutics, less dangerous than Broussaisism but equally unfounded. Rokitansky expressed and enforced upon his followers "the conviction," to quote his own words, "that pathological anatomy must be the foundation not only of medical knowledge but also of medical treatment, yes, that it contains everything that there is in medicine of positive knowledge and of foundations for such knowledge." Against this view Virchow pointed out that each department of medicine has its own field and must be investigated by itself and cannot be constructed entirely out of another. As he said, "Pathology cannot be constructed by physiologists, therapeutics not by pathological anatomists, medicine not by rationalists."

Pathological anatomy shows us simply the morbid changes in the organs, tissues and cells as they exist in one phase or in a series of phases. It does not show us the morbid process as it goes on in time. It does not reveal the alterations in function. Pathological anatomy is essential to pathological physiology, but the relations which these branches of knowledge bear to each other are similar to those between normal anatomy and physiology. General pathology or pathological physiology, as Virchow likes to call it, rests also upon experiment and clinical observations. It never has been and never can be successfully built up from pathological anatomy alone. Its methods are those of normal physiology. In one of his earliest publications in 1846, Virchow said: "It would be sad indeed if anatomical investigation were compelled to confine itself to the dead material, to the recognition of the completed conditions of isolated and determined products, if the entire outcome were only the description and classification of certain objects in nature. Pathological experiment remains ever the sure control for the pathological anatomical conclusion, and it will seldom be employed without disclosing to us new and valuable sources of knowledge." These words appropriately introduced the description of Virchow's admirable anatomical and experimental work on "Plugging of the Pulmonary Artery and its Results." All this needed to be said when Virchow said it, and it has not lost its force to-day.

John Hunter and Magendie were the pioneers in experimental pathology, and Virchow and Traube established pathological experiment in its impregnable position as the most powerful aid in the development of pathological physiology.

The establishment of cellular pathology is one of the greatest events in the history of medicine. That Virchow's share in this was decisive and controlling cannot be successfully contested. The historical points pertaining to the development of the principles of cellular pathology have been often and much discussed. Virchow's investigations leading to the development of this great thought in his mind are briefly referred to in chronological sequence in the article at the beginning of the one hundredth volume of his *Archiv*. On this occasion I cannot enter into the history of the question, save to emphasize one point which is lost sight of by some of those who have written on the matter. The discoverer of a scientific fact is not he who has divined it, but he who has proved it. The opportunities for the study of the development of ani-

mal cells are furnished chiefly by embryology and by pathology. The demonstration that all cells are derived from pre-existing cells was easier to bring by the embryologist, starting with the ovum, a single cell, than by the pathologist. Hence it is not strange that embryologists, such as Reichert, Kölliker and later Remak, had discarded the blastema theory, so far as the development of the embryo is concerned, at a period when the same theory prevailed in pathology. But so long as it was not proven that in pathological formations the new cells also come from pre-existing cells, this general principle of cell development could not be considered proven. It was not until Virchow had brought this part of the evidence, more difficult to obtain than the embryological and equally important, that the truth, which he was the first to frame in the words, *omnis cellula e cellula*, was fully established. The nutritive, the functional and the formative disturbances of cells became in his hands the ground-work of cellular pathology; and although this ground-work was laid before the publication of his "Lectures on Cellular Pathology," in 1858, nevertheless these came as a revelation to most physicians throughout the world.

The principles of cellular pathology have become to such an extent an integral part of medical thought that we can hardly estimate to-day all that this discovery meant a generation ago. To do this we must put ourselves back in thought to a time when all organized pathological products, pus, tubercle, cancer and all tumors were supposed to be formed out of a primitive blastema, an exudation of some kind. Think of trying to come, under the influence of such ideas, to any coherent or intelligent opinions as to the nature and development of morbid processes.

The never-ending strife between humoralism and solidism would probably be going on to-day had it not received its death-blow from cellular pathology. The termination of this strife does not mean that we are not the heirs of great truths which came out of it, or that there is any contradiction between cellular pathology and humoral or nerve pathology in the proper sense of the terms. In 1855 Virchow said, with a cast of thought perhaps derived from his political opinions: "While we contend for the *Tiers-état* of the many little elements, it may seem as if the aristocracy and the hierarchy of blood and nerve were to be destroyed to their very roots. But it is here only usurpation which we attack, monopoly which we wish to overthrow; and once again we emphasize it that we fully recognize blood and nerve as equally authorized factors together with the other parts; yes, that we do not in the least question their predominant importance, but that we concede their influence upon other parts to be only a stimulating and moderating, not an absolute, one."

With the recognition of cellular pathology, it became clearer than ever before that the laws working in disease are not different from those in operation in health, but that they are subject to different conditions. The ontological conception of disease passed out of the horizon of scientific medicine.

Cellular pathology is not a system, a doctrine; it is a biological principle, as has been said by its founder. Its foundations have been attacked, but never have been shaken. The discoveries of karyokinesis, of wandering cells, of the migration of leucocytes from the vessels, and of the specific cellular germs of disease have only widened our views of cell pathology. Cellular pathology is one of those great principles in science which, when established, disclose new points of view, open up limitless fields for investigation, and receive the new results without a tremor in the foundations. How different this from the era of speculative systems and schools of medical doctrine, when every new discovery threatened the overthrow of the dominant system!

With Virchow's return to Berlin, in 1856, he had secured from the government the concession of a new pathological institute, to be constructed according to his own ideas and plans. In any estimate of the reformatory influence of Virchow upon pathology, his share in bringing about the general recognition of the importance of establishing pathological institutes should not be overlooked. In 1858 he wrote: "As in the seventeenth century anatomical theatres, in the eighteenth clinics, in the first half of the nineteenth physiological institutes, so now the time has come to call into existence pathological institutes, and to make them as accessible as possible for all." His ideas as to the general organization of such institutes have been the controlling ones for most of those since constructed in Germany, and for many in other countries. The importance of such institutes for the instruction of students and physicians and for the progress of pathology cannot easily be overestimated. A pathological institute, constructed and conducted like the one in Berlin, requires a very considerable outlay of money, which Virchow said must come in general from the government. In this country, however, we must look in general to private beneficence to endow hospitals and medical schools with such pathological institutes as have made Germany for many years the Mecca of those from other countries who wish to study pathological anatomy.

Virchow, like his teacher, Müller, and like one of his great predecessors in Würzburg, Döllinger, has been one of those teachers who have attracted pupils in large numbers, and have exercised a powerful influence upon their thought and development. The professorships of pathological anatomy in Germany are occupied to a very large extent by those who have been under the inspiration of his personal teachings, and many in other lands are proud to call him master.

Nearly forty years ago, Virchow wrote: "There are also those who, if they do not create the current, still give to it its direction and force. These men are not always the happiest. Many go down in the movement, or by it. Many grow weary after they have given to it their best forces. Much power and great tenacity are necessary if the individual shall not only live to see his triumph, but also to enjoy it."

He who wrote these words has lived to see and today enjoys his triumph. May health and happiness be his for many years to come!

Szigethy reports the case of a woman, aged seventy-five years, who, thirty years before, in order to support a prolapsed uterus, introduced into the vagina a ball of string previously dipped in wax. This entirely relieved her, and was worn without discomfort, so that she forgot its existence, when it was forced out of place by a violent effort. When extracted, with some difficulty, it measured seven inches in circumference, and was covered with mucus, but otherwise unchanged.

Original Articles.

RELATIONS BETWEEN ARTERIAL DISEASE AND VISCERAL CHANGES.[1]

BY GEORGE L. PEABODY, M.D., OF NEW YORK.

THE subject upon which I have been designated to open a discussion this year by the committee is so very comprehensive as to necessitate some limitation of an arbitrary character. As announced upon the programme it might be held to include the results of atrophic changes in arteries, amyloid degeneration, hyaline degeneration, the various stages of atheroma, suppurating artheritis, embolism, thrombosis, and numerous other conditions besides the one of chief importance, namely, *arterio-sclerosis*. It is to some few of the many important relations of the latter condition that I shall ask your attention.

Its nomenclature is still in a somewhat confused state, and about the more important circumstances of its etiological relations until recently there seemed no possibility of accord. At present, although a definite agreement has not been arrived at, there seems to be a tendency in such a direction.

An excellent and brief review of its early history is given by Orth in his "Handbuch d. spec. path.," (Berlin, 1887, p. 229), where a good bibliography of the subject is also to be found.

The most generally accepted designation to-day, arterio-sclerosis, is the name given to it by Lobstein many years ago, and quoted by Virchow[2] in 1856. Rokitansky[3] called it simply an "auflagerungs process," and regarded the thickening in the arterial wall as caused by a deposit from the arterial blood in consequence of some dyscrasia affecting that fluid. This position he subsequently surrendered, and accepted in its stead the theory that it was an inflammatory hypertrophy, in the formation of which some exudation from the adventitia might be concerned. This change of view was partly caused by proof[4] which Risse adduced, that the thickening in the vessel wall was covered by endothelium, which could not have been the case had it been due to a deposit.

The name given to it by Virchow in his classical writings upon the subject was *endarteritis deformans, s. nodosa*, — writings all of which have still the ring of science and of truth, although improved methods and microscopes have tended to modify many of the views enunciated in them. He himself enumerates many of his contributions to this subject in a short controversial article in his own *Archives* for 1879, (Vol. lxxvii, p. 380).

Virchow held that the young cells which were found in recent growths of inflammatory tissue in the vessel wall were to be traced to an inflammatory proliferation of the normal intima-cells. Traube, Köster, Talma, Cornil and Ranvier, and others differed with him. Some were inclined to regard them as wandering leucocytes from the lumen of the affected artery itself, others as leucocytes from the vasa vasorum.

Köster and his pupil Trompetter not only deny the cell-proliferation of the intima maintained by Virchow, but claim that every endarteritis is dependent on a pre-existing meso- and peri-arteritis, and that the existence of all of these forms of vessel degeneration is wholly dependent upon the presence of vasa vasorum at the site of their formation.

Heubner (1874) regarded the process as studied by him in the arteries of the brain as being due to syphilis.

Friedländer (1876) showed that this view was erroneous, that similar changes occurred in a great variety of conditions, that they were very widespread in the body and of great importance. He gave to the condition the name *arteritis obliterans*.

Baumgarten,[5] three years later, also showed that from the *appearances of the growth in the intima alone* it was impossible to say whether the disease was due to syphilis or to one of many indifferent causes. He lays great stress upon the fact that in the appearances of the adjacent tissues may often be found characteristic evidence of syphilis. It is not likely to be limited to arteries of brain, according to him, except in syphilis; but if you wish to be sure of this etiological factor in a given case, you must look carefully for *other* evidences of it. Thus, it may occur in close proximity to a gumma: there may be masses of granulation-tissue with caseous foci in the adjacent adventitia, and these may be in close relation to old diffused areas of fibrous peri-arteritis.

All of these conditions would assist one in ascertaining the origin of a given arterio-sclerosis: but from the structure of the growth in the intima alone, it must be borne in mind that differential diagnosis is not possible.

Practically the same is true of tuberculosis as a cause. If we find *other* evidences of tuberculosis, such as bacilli in the adventitia, a generalized process of tuberculosis, etc., the etiology of the case becomes simple: but from the location or appearance of the growth in the intima, no such information can be obtained. In fact, it is common enough to find in chronic phthisis near the pulmonary lesion, well-marked arterio-sclerosis which is not of tubercular origin, but is to be regarded as a part of the cicatricial process which is induced by the tuberculosis.

Somewhat earlier than this, in England, Dr. George Johnson[6] showed that the walls of small arteries in various parts of the body were often greatly thickened in Bright's disease, and he ascribed the thickening chiefly to hypertrophy of the muscular fibres in their walls.

In 1872 Gull and Sutton read their famous paper before the Royal Medical and Chirurgical Society, in which they took the ground that the thickening in the arterial walls in Bright's disease was due to a hyaline fibroid formation, partly in the adventitia, partly in the intima. They found similar changes in the walls of the capillaries. They found generally an atrophic condition of the muscular layer of the arteries, while the inner and outer coats were thickened. It soon developed that the hyaline appearance was an accident, due to the action of the acidulated glycerine in which they had placed their preparations.

Since the appearance of their paper in the *Med. Chir. Transactions*, 1872, numerous other writers have described a hyaline degeneration of vessels. It seems likely that several different forms of degeneration have been described under this name, a change of this de-

[1] Read at the meeting of the Association of American Physicians, Washington, September, 1891.
[2] Ges. Abt., 1856, p. 498.
[3] Ueber Einige D. Wichstigsten Krankheiten D. Arterien" quoted in Schmidt's Jahrb., 1854, vol. 81, p. 306.
[4] A. Risse: Observationes quædam de arteriarum statu normali; atque pathologico. Inaugural dissertation, 1853.
[5] Virchow's Archiv, lxxvi, p. 268., 1879.
[6] Med. Chir. Transactions, 1868.

scription occurring in different parts of the arterial walls under different circumstances. It is to be considered as rather an obscure and ill-defined condition in special pathology to-day,[7] whose causes and consequences need further investigation.

During the past fifteen years, since the writing of Friedlænder just referred to, much attention has been devoted to this subject in different countries, and many papers have been published upon it, to some of the most important of which I shall ask your attention.

Probably the most important work upon this subject that has been done since Virchow's, is that by Thoma, formerly of Heidelberg, now of Dorpat, published in Virchow's Archives, vols. xciii, xcv, civ, cv, cvi, cxi, cxii, cxiii, and elsewhere. The latest publication from him with which I am familiar is a very brief review of his work on arterio-sclerosis in the *St. Petersburger Med. Wochenschrift*, 1890, p. 360. It would be hardly feasible to present to you his arguments for the position that he maintains. His work impresses one as serious, painstaking, and ingenuous, and his conclusions are of the utmost importance. We may not be able to accept them all, but in the main they seem to me to be entitled to very careful consideration. He tells us that while observers have long been agreed as to the extent to which this process is developed in the arteries, the cause of this fibrous growth in the intima has hitherto escaped detection.

It had been observed as a common occurrence in arteries whose capillary system had been previously destroyed by ulceration, or by caseous or by fibroid change. This had been so often seen that the conclusion had been reached that there must be some etiological relation between the disease in the artery and the change in its capillary system; but it was very doubtful which of the two conditions was the cause and which the effect of the other.

After carefully working over a kidney in which the process of interstitial inflammation was far advanced, one whose renal artery showed extensive new growth of the kind that we are studying, he concluded that *some change in the blood-current in an artery must result from an extensive destruction of its capillaries;* and, finally, by a very careful study of the aortic systems of nineteen bodies of fœtuses and young children, he reached further conclusions which are of great interest. Even though it may seem to you, as it does to me, not quite safe as yet to accept all of the conclusions to which he thinks his work has led, still a brief consideration of them will certainly repay us; and it may be well to begin with the kidney, and to say that he concludes that the interstitial inflammation in it is the cause and not the effect, of the sclerotic process in the artery.

He finds that uniformly there develops a growth of connective tissue in the intima of the human aorta just after birth. This spreads throughout the entire arterial system which formed the direct communication between the ductus arteriosus and the umbilical arteries, at the same time that the intima of all the rest of the aortic system remains unchanged. What should cause this peculiar distribution of this growth? Is this arterial area subjected at the moment of birth to changed conditions which do not apply to the rest of the aortic system? It would seem so, and it would appear as if this newly-formed connective-tissue must be dependent upon some disturbance of the circulation consequent upon birth, and this, he thinks, can only be a *slowing of the blood-current in the aorta* which is brought about by the closure of the two large arteries that cease to perform their function at birth, namely, the two umbilical arteries.

The physiological obliteration of these two large arteries and the loss of them as channels through which blood must be sent, causes the descending aorta to become disproportionately large, that is, too large for the due performance of its diminished function. The result must be, we are told, that the blood-current passes through it more slowly than it did in intra-uterine life. A careful review of the changed physiological conditions which occur in the aorta at birth and soon thereafter, would seem to justify this *a priori* conclusion, although it is not susceptible of demonstration. If this be so, then this part of the aorta must be diminished in size proportionately, if the circulation through it is to go on as before. The new growth of connective tissue in the intima, whose existence under these conditions is proved by the most elaborate and painstaking microscopic studies, tends to reduce the lumen of the aorta to the extent called for by the changed conditions. Not alone the existence of this new growth, which appears soon after birth, but its limitation to a definite region serves to prove that it is due to the cessation of the circulation in the placenta. The fact of its restriction to that arterial trunk which leads from the ductus arteriosus to the umbilical arteries would seem to justify the conclusion that it is due to the disturbance of the relation in point of size between the descending aorta and its branches.

In another paper[9] he shows that similar results follow in arteries whose capillary systems are suddenly diminished by surgical procedures, such as amputation, ligature, etc.

The so-called organization of the thrombus in arteries after ligature, had been already shown by Baumgarten[10] and others to be really not an organization of the thrombus. The closure of the vessel after ligature had been shown to be due in part to a proliferation of connective tissue cells from the endothelium of the intima, or from its deeper layers, in vessels whose intima is thick enough to have "deeper layers"; and in part to a mass of granulation-tissue which comes from the adventitia, having found its way into the lumen of the vessel through the rent in the media which always occurs at the site of application of the ligature. It is therefore a substitution of an organized tissue for the thrombus, rather than an organization of the thrombus which takes place, when the current of blood in an artery is suddenly checked by the application of a ligature; and the closure is partly effected by a process which is quite similar anatomically to that which we are studying.

To revert to Thoma's work. In all, Thoma has published eight papers on this subject, and numerous others on aneurism-formation and other allied topics. In the eighth paper[11] he gives a brief review of the most important points of his theory, and again designates this process "compensatory endarteritis," a name which he had previously given to it. He believes that the changes in the vessels come about in obedience to the following law: Every slowing of the blood-current in the arteries and veins of man which

[7] Vide Ziegler Path. Anat. 1890, vol. ii, p. 56.

[9] Fortschritte, d. Med., 1884, p. 713.

[10] Leipzig, 1877.

[11] Virchow's Archiv, 1888, 112, p. 10.

is not completely and at once remedied by a proportionate contraction of the media, leads to a new growth of connective-tissue in the intima which narrows the lumen of the affected vessel and thus restores the normal swiftness ol blood-current more or less completely.

The empirical explanation of the changes in the vessel-wall advanced by Thoma is this: the lesion originates in the media, which has lost its tone in some undescribed way. The defective elasticity of the media which results, allows a dilatation of the artery to take place, in consequence of which the blood-current flows more slowly than normal. This slowing of the blood-current produces a hyperæmia of the vasa vasorum and a new growth of connective-tissue in the intima, with which there is associated later a similar formation in media and adventitia.

To go a little further back, the hypothesis would be that the sensitive nerve filaments in the arterial walls appreciate the change in the condition which surrounds them when the blood-current becomes slow, and in consequence they produce a reflex hyperæmia of the vasa vasorum. This functional disturbance of the vasa vasorum is the direct cause of the new growth of connective tissue, first, in the intima, and then in the other two arterial coats. The tension of the arterial walls is the cause of the form taken by this growth in the intima.

As soon as the growth reaches such dimensions in any situation that normal rapidity of blood-current returns, the sensitive nerves are restored to their normal condition, the hyperæmia of the vasa vasorum ceases, and no more new tissue forms in the intima, until the blood-current again undergoes changes of speed and again sets in operation the various factors in what might be called the causal nexus.

Thus, for Thoma, the explanation is purely a mechanical one; and though it has been more or less attacked, it seems to me to offer the best explanation of the cause and sequence of the phenomena that has yet been put forward. The distinction [13] which he draws between *primary* and *secondary* diffuse arterio-sclerosis is of importance. We have already noticed the importance which he attaches to the diminution in the resistance or resisting elasticity of the media as a factor in the etiology of the condition.

In some cases the first recognizable departure from the normal consists in the stretching of this media (whose elasticity is less than it should be) by the blood-pressure, which need not be abnormally great. This is the cause of the diffuse primary arterio-sclerosis.

This is characterized by a dilation and tortuosity of the arteries, by an eccentric hypertrophy of the media and by a diffuse, compensatory, fibrous thickening of the intima. Thus to the dilated and somewhat misshapen lumen of the vessel a size suitable to the blood-current is supplied.

From all of this there results a farther diminution of the elasticity of the walls of the affected vessels which opposes an increased resistance to the blood-current, and thus becomes the cause of a secondary hypertrophy of the left ventricle, with the development of the *pulsus celer* as a symptom.

In other cases the diffuse arterio-sclerosis seems to depend upon more remote causes, which bring about disturbances of circulation in certain localized areas. Such,[14] for instance, would be a destruction or narrowing of smaller vessels derived from certain arterial trunks, by any pathological process.

Thus, it may be due, not merely to a weakening of the contractile power of the elements that compose the media, but to an increased resistance in the periphery. In all such cases the rapidity of the blood-current is diminished in certain arteries. This is not regulated or removed by the contraction of the media, because this tunic has lost its elasticity. Thus all the conditions are present for the development of a compensatory fibrous thickening of the intima, which will cause a diminution of the lumen and thus give to it the size and shape which the new conditions call for. To these changes the name, diffuse secondary arterio sclerosis, has been given. This also causes the same change in the heart and quality of the pulse as the other form. The increase in blood-pressure thus caused is sometimes followed by a slight degree of hypertrophy of the media.

Both the primary and secondary forms of this affection are dependent for their origin upon a common factor, namely, a loss of mechanical contractile power or elasticity on the part of the media. Thus, the two forms of this affection are often associated in the same person and become really only two sub-divisions of a single disease, diffuse arterio-sclerosis.

Where the masses in the intima are circumscribed,[14] forming the arterio-sclerosis nodosa, the cause is the same as in the primary form just described, that is, a slowly developing loss of elasticity and consequent yielding of the media. This causes a slowing of the blood-current, with the consequences so often dwelt upon. The stretching of the arterial wall takes place gradually, and *pari passu* the growth of connective-tissue occurs in the intima. This being the case, the deeper layers of the *newly formed* connective-tissue must also be subjected to the stretching process as other layers are formed upon them. A consequence of this stretching is the development of degenerative changes in these outer layers of newly formed connective-tissue, those lying next to the media. Among the forms of degeneration to which this tissue is liable are calcification, fatty, hyaline and atheromatous changes. These degenerative changes seem to be characteristic of arterio-sclerosis nodosa. In some cases serious changes like these are negatived by a further compensatory formation of connective-tissue in the intima over them.

The points of origin of arterial branches [15] seem to be favorite sites for the development of the nodose form. Thus, there develop at these sites, various circumscribed deformities of the lumina of vessels.

The hyaline and atheromatous degenerations in the new tissue are marked by a more or less distinct swelling which often causes the compensatory thickenings of the intima to project somewhat into the lumen of the vessel, and thus to interfere with the blood-current and also to narrow the lumen of arterial branches at their sites of origin in the mother vessel. Various and grave disturbances of nutrition may, of course, result in the organ to which these branches go, and it is conceivable that often a vicious circle is thus established.

Thus the diseased arteries supply less blood to a given organ than its proper nutrition requires. Local

[13] Vide Fortschritte, d. Med., vol. iv, 1886, p. 498.
[14] Welch: Maryland Medical Journal, 1891, p. 76.

[14] Virchow's Archiv B. 105, i, ii; also, Fortschritte d. Med., B. iv, 1886, p. 863.
[15] Virchow's Archiv Bd. 106, iii; also, Fortschritte d. Med., Bd. v, 1887, p. 70.

degenerations ensue in the organ. These changed conditions call for still less blood, and there results a further disturbance in the rapidity of the current in the nutrient artery. This causes further changes in the vessel's intima.

I have purposely omitted histological details, inasmuch as I felt sure that they would be so much more ably dealt with by my colleague.

Pekelharing,[16] in a recent paper, accepts Thoma's main conclusions, but he endeavors to explain the cause of the proliferation of the endothelial cells from the inner surface of the intima by supposing an alteration in blood-pressure in the interior of the diseased vessels. By some carefully devised experiments he seems to show that if the blood-pressure be diminished the intima grows. His idea is that under ordinary circumstances the pressure exerted on the intima by the blood is sufficient to prevent any growth except such as may be needed for repair, but, that if the pressure be diminished, then the endothelium can grow in excess of the needs of the system until a normal pressure be again exerted upon it.

How are we to account for the alteration in the rapidity of the blood-current, if that be the initial local factor in the series of events which leads to the development of the arterial changes under consideration? To this question the answer is vague and unsatisfactory. The change in rapidity of current is not susceptible of proof. We are to infer its existence from the facts which have been already adduced.

When we endeavor to explain its cause we begin to deal in generalities which are unsatisfactory to the seeker after the exact.

Its cause [17] is to be regarded as a general disturbance of nutrition, which may be due to infections of various kinds, or to different kinds of pathological processes or to senile changes. These general disturbances of nutrition cause disease not only of the arteries, but of the veins and capillaries as well.

Arterio-sclerosis can occur in a great variety of conditions. Unless we accept Thoma's conclusions, it is still often difficult to determine whether it is the cause or the effect of the morbid process by which it is accompanied. It is a common occurrence in inflammations in which the formation of connective tissue is at all a prominent factor. Thus it is often seen in connection with cirrhotic changes in the kidney, in the testicle, in chronic inflammatory processes of lungs, of Fallopian tubes, in many neoplasms, especially those accompanied by abundant connective-tissue formation, such as elephantiasis, fibroma, carcinoma, epithelioma. Heredity, syphilis, gout, rheumatism, old age, chronic alcoholism, all seem to be important etiological factors in the development of this arterial change, and, to these, Thoma has added functional arterial strain.

Sack [18] has studied the topographical distribution of the disease throughout the arterial system.

He finds that physiologically there exists in the common carotid a sub-endothelial layer of connective-tissue which increases steadily in thickness, and never becomes very thick. If diffuse arterio-sclerosis be present, this growth in the carotid increases very materially in thickness.

The explanation of this condition of things in the carotid is this: This artery has attained almost its complete development by the tenth or twelfth year; as the rest of the arterial system grows after that and accommodates more blood, the carotid is subjected to frequent or even constant stretching. After a time this overstretching causes it to lose much of its elasticity; it becomes unable to return to its proper size, and becomes too large for the amount of blood that it has to transmit. Under these circumstances it is easy to account for a compensatory sclerosis. Sack's results in the matter of topographical distribution of this disease show a difference between the diffuse and the nodose form. The former selects the arteries of the extremities, the latter, the aorta and carotid.

The arteries of the extremities are subjected to more hydrostatic pressure than those of the interior of the body, by reason of their remoteness from the heart, and hence they are more likely to be diffusely dilated, and to need the compensatory sclerosis in consequence.

The nodose form depends, however, upon local weakness or disease of the media; and it is in the aorta and carotid that the force of the heart's action is likely to cause such localized stretching, especially by reason of the branching and change of direction to be found in them.

Sack gives a scale showing frequency of occurrence of sclerosis of all forms and grades in different arteries, with 100 as a maximum. The following is the order of frequency: tibialis anticus, 94, ulnar, 92, radial, 79, popliteal, 54, ascending aorta, 58, common carotid, 58, external iliac, 53, abdominal aorta, 52, brachial, 51. When it occurs as a degeneration of old age, it has a great variety of locations. Its development may be very slow, and it may chiefly affect the aorta; it may be confined to the arteries of a single organ or it may extend to those of several organs, or it may be found in many or in most of the organs.

If none of the recognized causes exist and still the lesion occurs, then we are inclined to ascribe it to tobacco or lead, or to some of the exigencies of life (not more nearly defined) to which the patient has been exposed. Of late, too, endocarditis, typhoid fever and scarlet fever have been included among the remote causes of the lesion.

If it occur in the vasa vasorum, it may be the cause of a localized atheroma, this degenerative process following upon the interference with the blood-supply to vessel's wall.

Let us consider, now, some of the more important effects of these changes in the arteries. Of late years, much has been written upon the subject of the relation of arterio-sclerosis to aneurism; [19] and although all agree that the two conditions often occur together there seems to be no little discrepancy with regard to their relations from an etiological point of view.

It may be interesting to devote a few moments to this matter, with the premise that it is not claimed by any one that arterio-sclerosis is the sole cause of aneurism.

It is susceptible of experimental proof [20] that in the early stages of the affection the arterial walls are weakened and dilatable. The walls are still elastic, but less elastic than normal, so that if the pressure within be gradually increased the lumen is increased to a much greater extent than is the case with a normal artery

[16] Beiträge z. Path. Anat. u. z. All. Path., Jena, 1890, vii, p. 245.
[17] St. Petersburger Med. Wschrift., 1890, No. 40, p. 360.
[18] Sack: Virchow's Archiv, cxii, 1888, p. 403.

[19] Thoma: Untersuchungen über aneurisma. Five papers, Virchow's Archiv, Bd. 111-113; Deutsche med. Wochenschrift, 1889, xv, pp. 340, 361.
[20] Deutsche med. Wochenschrift, 1889, p. 341. Also Virchow's Archiv, cxvi, 1889, 1.

under similar circumstances. In the next stage the thick layer of connective tissue in the intima renders the vessel fully able to withstand momentary increments of pressure from within.

It seems probable, therefore, that the arterio-sclerotic aneurism develops during the first stage of arterio-sclerosis. Thoma tells us that at this time the wall of the artery is so far weakened that it is perfectly easy to produce artificial aneurisms in the vessel removed from the body during life or after death by a pressure of from twelve to twenty-four centimetres of mercury. This cannot be done either with normal arteries or with such as present an advanced degree of arterio-sclerosis.

It is of interest to know that the early stage of this lesion, the time when the arteries are easily dilatable, is supposed to last only a year. As a result of experiment and calculation, the inference has been drawn that a year after the beginning of the disease in a vessel, the intima is to such an extent re-enforced by newly formed connective-tissue that liability to formation of aneurism may be excluded.

It should be remarked that this period of time applies, not to the whole arterial system (in Thoma's calculations), but to each diseased vessel. That is to say, the various arteries may become diseased in succession throughout the body; and from the beginning of the development of weakness in the muscular coat in the case of each vessel, a year must be allowed to elapse before liability to aneurism in that particular artery has passed.

"Every individual who is the subject of arterio-sclerosis is thus for a year exposed to the danger of aneurism in all parts of his arterial system. This period occurs chiefly between the ages of thirty-five and forty-five years." *We* should probably want stronger evidence of the truth of such exact inferences than seems to be forthcoming before we accepted them.

It is of great clinical interest that this weakness of the arterial wall which marks [21] the early stages of arterio-sclerosis can be diagnosticated by ophthalmoscopic examination. The evidences of its presence are said to be tortuosity of the arteries, pulsation and locomotion visible in them (without other explanation, such as chlorosis, anæmia, neurasthenia), opacities in their walls, often a diminished lumen, hyaline degeneration of some vessels of papilla, occasionally aneurism of the central artery, and oftener varicose veins. Complete obliteration of an artery has been seen, and thickening of the walls of veins with partial obliteration of their lumina.

It is altogether likely that changes like these in the central artery of the retina, and in the ophthalmic artery, are associated with changes in the internal carotid. It is believed that the rest of the arterial system may be intact and yet serious changes show themselves in the carotid and its branches.

(To be continued.)

QUARANTINE IN THE SUEZ CANAL. — An international conference is to assemble shortly at Venice, in order to deliberate, at the instigation of Austria-Hungary, on the subject of the passage of the Suez Canal by vessels in so-called "quarantine."

[21] Thoma: Deutsche med. Wochenschrift, 1889, No. 18, p. 362, and Archiv für ophthalmoscopie, XXV, 1889. Raehlmann: Zeitsch. f. kl. med., xvi, 1889, 506.

LEAD PARALYSIS.

BY S. G. WEBBER, M.D., BOSTON,
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IN 1882,[1] I published several cases of lead-poisoning in which the paralysis was limited to or most marked in the legs, the symptoms being due probably to a peripheral neuritis. During the last few years several other similar cases have come under my notice. In that article I reviewed at length the results of autopsies and the views of observers in regard to the seat of the lesion in such cases, as published up to that time.

The view that the muscles are chiefly affected has found but little support, Friedlænder being the principal advocate of this localization.

Erb, E. Remak, Eulenberg, Monakow, Bernhardt, de Watteville, Birdsall, favor the view that the spinal cord or brain are the parts primarily affected. Westphal, Leyden, Zunker, Gombault, Charcot favor the view that the lesion is primarily a neuritis. Not all these authors have been able to examine the nerves and nerve-centres in cases of lead paralysis.

Since the publication of the previous paper on this subject there have been several autopsies published.

Wynter [2] found lead in the brain, in case of lead-poisoning.

Oppenheim [3] found the ganglion cells of the spinal cord diseased. While the white substance was normal the gray substance of the anterior columns (only in a doubtful degree of the posterior column) was diseased throughout nearly the entire cord. The chief centre of the diseased changes was the cervical and lumbar enlargements, while above and below these the intensity of the changes diminished. He draws the inference that these cells must have been disturbed in their function long before they showed any material changes which could be recognized.

Schultze [4] found the cord normal. He found, on the other hand, an atrophy and destruction of most of the nerve fibres in the trunk of the radial, below where the branch for the supinator longus is given off. Above, the change was less, so that just below the plexus there were no clearly abnormal fibres.

Schultze thinks that the pathological changes are to be found in the nerves primarily, that in generalized lead paralysis a central lesion in the anterior cornua may be added to this.

Osw. Vierordt [5] found in one case no change in the spinal cord nor nerve roots; especially was there no change in the cervical portion of the cord.

"An undoubted pathological change is nowhere found in the spinal cord and its roots."

There was extensive degeneration of the right radial and median nerves, less marked of the ulnar nerve.

He considers that there is no analogy between the pathological changes found in lead paralysis and those found in infantile paralysis.

Alexander Westphal [6] reports thirteen cases of saturnine encephalopathy with two autopsies. His conclusions are:

(1) That there is a direct influence of lead upon the brain. This toxic influence is manifested by general cerebral symptoms, as well as by focal symptoms. Especially are to be counted among these that peculiar neurosis, which is accompanied with hemianæsthesis

[1] Archives of Medicine, vol. viii, August, 1882.
[2] Journal of Mental Science, January 1888, p. 483.
[3] Arch. f. Psych. und Nervinkh., xvi, 1885, p. 476.
[4] *Ibid.*, xvi. 1885, p. 791.
[5] *Ibid.*, xviii, 1887, p. 48. [6] *Ibid.*, xix, 1888, p. 620.

and psychic disturbances. At the same time single cerebral nerves (especially the optic) may be subject to anatomical changes from the poison.

(2) There is an influence of lead upon the cerebral vessels, and thereby is produced arteritis and its consequences (hæmorrhage, encephalomalacia).

(3) Influences of lead upon the kidneys with uræmic cerebral symptoms.

(4) Finally these causes may be combined together.

It would seem from the results found in the majority of autopsies that neuritis is the most common lesion in these cases, but it is not the only change due to lead. Yet it is not in accordance with what we know of neuritis to have in it exaggerated deep reflexes and ankle clonus. The cases in which the symptoms of lateral sclerosis were prominent could not have been cases of neuritis. Thus:

Cases I and III were clinically typical cases of sclerosis of the lateral columns except the anæsthesia in Case I.

Case II had some of the symptoms of lateral sclerosis, but was less simple, and with these there were cerebral symptoms.

Case IV had the exaggerated deep reflexes, but otherwise did not resemble lateral sclerosis.

Cases V and VII were typical neuritis.

Case VI had some spasmodic action of the legs, which is less commonly seen in neuritis, and the cerebral symptoms are rare in neuritis. Otherwise the symptoms pointed to the nerves as the seat of the lesion.

Clinically, then, the symptoms, in some of these cases, would indicate that the lesion was in the nerves; in other cases, that the lateral columns of the cord were chiefly affected. In others it would seem as though the nerves or cord and the brain were both affected together. These might be considered mixed cases.

As might be expected, judging from the differences of opinion as formed from the results of post-mortem examinations, the analysis of the clinical features of these few cases would lead to the conclusion that no one nervous tissue is exclusively affected, but that all may be subject to changes due to the poison of lead.

Case I. Anæsthesia, partial analgesia of legs, exaggerated reflexes, loss of motion, contracting of legs, lead in urine, cerebral symptoms, — recovery, relapse.

Miss A. G., age nineteen, student, was admitted to the Adams Nervine Asylum, October, 1885; for nearly a year she had had a tired feeling, after that a numbness in her limbs and a feeling of weakness, no headache nor pain. She was obliged to leave school in April on account of this general loss of strength and feebleness in her legs. There were no other symptoms at that time.

There was found marked anæsthesia on both sides as high as the umbilicus; partial analgesia to the same height; muscular sense or the sense of position much diminished, especially on the right. Plantar reflex more marked on left; patellar tendon reflex strong on both sides; ankle clonus strongly marked on both sides; a light patellar clonus on the left, not on the right.

The legs were stiff; it was not easy to move them passively. During the night the knees were drawn up, and in the morning the patient had considerable difficulty in straightening the limbs on account of the stiffness, worse on the right. The knees and ankles had been swollen; the hands and fingers had not been. There was a slight uncertainty in the motion of the hands with the eyes shut. The patient was unable to stand; she could sit in a chair if well supported; she could not move her toes, but could slowly extend the legs or draw them up.

There had been no colic, no lead line on the gums. Except the above mentioned slight inco-ordination of the hands, there were no symptoms above the waist. After she had taken iodide of potassium for a week, lead was found in the urine.

She gained somewhat before leaving, had more sensation in her limbs; after about two months could tell whether her feet were hot or cold, and sensation was more natural half-way up to the knees. In March she wrote that she could sometimes move her toes, but the legs moved when they got ready, not when she wished to have them.

Later she was taken to a "Christian Scientist," and was much injured by excitement. She became so bad that there was a question, whether she had not lost her reason; but she subsequently went West, where she had more judicious treatment, slowly recovered the use of her limbs, and could walk well without difficulty. Four or five years later she again was partially disabled; whether she was again exposed to lead I have not learned.

When first seen she was not especially nervous, but the hysterical condition was developed during the excitement caused by visiting the "Christian Scientist," showing that the nervous system was in a condition to be easily upset.

Case II. Cerebral symptoms, anæsthesia, severe pain, exaggerated reflexes, loss of motion, lead in urine, — great improvement.

Mrs. H. entered the asylum early in 1888, age twenty-five. She had been sick at times for three years since a miscarriage. She gradually lost strength, and was finally obliged to give up her housework. She felt tired out, the left side ached and was numb and cold, sometimes with a sinking feeling. The right leg gave some trouble, but less than the left. For about three weeks she had been dizzy; she had twice fallen at least partially unconscious; then her head felt badly; she was numb and unable to move for a while. She said she had a nervous attack the previous summer, in which it took several persons to hold her. She had a poor appetite, but nutrition seemed to be fairly good; the least exertion, however, tired her and exhausted her strength.

The pupils were rather large and reacted well; co-ordination of hands was good and sensation normal in hands; she lay with her feet crossed and extended; the great toes were strongly flexed; sensation to a light touch and to pressure was absent below the knees on the left, diminished on the right, diminished on the thighs in some areas.

On striking the ligamentum patellæ on the right to test for reflex, a continuous tremor of the leg and foot was excited. Ankle clonus of short duration was present on both sides. Pressing the left foot up to excite this caused severe pain in the left knee, followed by spasm and rigidity of the legs, especially of the left. The back was sore and tender to the touch. She could not walk; was confined to the bed; she slept poorly; the catamenial flow was profuse, attended with much pain and nausea. Her manner of talking and acting was decidedly hysterical; but she seemed really to suffer much in her back and the ovarian region. Lead was found in the urine.

The galvanic current was used to the spine, the legs and over the ovaries with relief to the pain. After several days she slept better, and finally she slept all night when the electricity was used. She eat more, and sat up.

May 1, it is recorded: "No ankle clonus; patella tendon reflex apparent, but obscured by muscular rigidity: sensation about both knees acute and painful."

She gained, and the last of October could walk about her room without assistance except such as she got from leaning on the furniture. All the muscles reacted naturally to the electric current. After leaving the asylum she relapsed, and did not do as well as I hoped she would.

Case III. Loss of motion, contraction in legs, exaggerated reflexes, lead in urine, — no gain.

Mrs. B., age forty-four, admitted June, 1888, was quite well till four years previously, then she first noticed numbness in the right leg, and that leg felt heavy; the gait was unsteady. Three years before entrance she had a child, and was somewhat better afterwards, so that she could walk about and do some housework. For about three months her legs felt strong, then they began to drag as before. She fell, striking her back, without loss of consciousness; since then has had pain in the small of the back and between the shoulders; otherwise she has had no abnormal sensations.

There was a swelling of the feet. After staying in bed a few days this improved, but she could not walk. The bowels were constipated. The legs drew up, flexing at the knees, and then in a short time extended again. On waking in the morning she found the legs flexed at the knees, especially if she was constipated. Sometimes the legs got crossed. Appetite and digestion were fair, and she got a fair amount of broken sleep. The skin was dry; there was œdema of the legs below the knees; sensation was about normal in the legs. The motion was much impaired in the legs; she could not rise without assistance. On moving the legs passively, they were found to be stiff; patellar tendon reflex was exaggerated; there was marked ankle clonus; plantar reflex was stronger on the right; the abdomen was full and tympanitic; the hands and arms were all right. A large amount of lead was found in the urine after she had taken iodide of potassium.

She made no material gain, and the last that was heard from her she could not walk, and was in essentially the same condition as when she left the asylum.

There was less nervousness and instability than in the two preceding cases.

Case IV. Loss of motion, anæsthesia in legs, exaggerated reflexes, lead in urine, herpes zoster, cerebral symptoms, — improvement, relapse, recovery.

Miss C., age sixteen, was seen in October, 1881; ailing since March; gave up school then. Going to school she walked rather over a mile, going that distance four times a day. She walked it easily in twenty-five minutes. Two years before she rode much of the time. At Christmas she was tired, but it seemed to be only natural fatigue. There seems to have been no serious trouble before March. She stayed at home from school three days on account of being tired and feeling poorly; was on the bed most of the time, slept much, was not feverish, had no sore-throat, had a dull headache. She then went to school for half a day, and on coming home could not walk, was very nervous, burst into tears; said that she could not get home, her limbs were numb and weighty. After that she lay down most of the time, slept much during the day all summer, could not walk much, was easily tired, going up stairs made her limbs ache and caused short breath. She cried much and easily.

During the summer she was at the seashore, and after her return her back ached when she rode. When tired her legs felt heavy, and sometimes ached as high as the knees, also she had a sleepy feeling in them. She had a dull headache most of the time.

When first sick there was twitching of the legs in sleep, but this had ceased when first seen. Patellar tendon reflex was strong; a slight ankle clonus was present.

Lead was found in the urine after she had taken iodide of potassium; lead was also found in the drinking-water.

About June she had a very painful attack of herpes zoster. She gained much after this, and was in a fair way to get about. The family moved into another house, and soon after she was less well. The symptoms took a more hysterical character: she was nervous, tremulous, easily moved to tears, and her general nervous condition was much worse. She was more easily tired and upset by company or by little vexations. It was found that the drinking-water was again liable to be contaminated by lead; this was corrected, and there was a slow but constant improvement until she fully regained her health.

Case V. Cerebral symptoms, loss of motion in arms and legs, pain, reflexes absent, lead in urine — great improvement.

Mrs. L., age forty-five, had been ill six or seven months, at first having strange, disagreeable feelings and general malaise, with dyspepsia. She had severe nausea and was fed by the rectum, was delirious, and mind was impaired afterwards for four or five weeks. She had had considerable discomfort in legs and hands, and was unable to grasp objects well. At times she had pain in her joints, her legs were weak, and she could not stand without support. The left leg could not be fully extended, the right could be. There was diminished muscular sense in the left leg; a light pressure on the calves caused pain. Rubbing hands and toes caused a feeling like electrical shocks. A light touch was not painful. There was diminished sensation on both sides.

The pupils reacted and the eyes moved naturally; tongue was protruded straight; motions of the face were good. There was a slight loss or coördination in the hands; no tremor of hands. Sensation of hands, feet and legs was natural. Patellar tendon reflex was absent on both sides; there was no ankle clonus. The left leg was somewhat contracted at the knee, and extension caused pain at the hip. To the faradic current the vastus internus on both sides almost failed to respond. Action of the peronei and the interossei of the fingers reacted very poorly. The flexors in the forearms did not react readily; the other muscles of arms and legs responded very well. An unususully large amount of lead was found in the urine.

There was a peculiar childishness in the patient's mental condition; it seemed as though the brain's action was enfeebled as the muscular power had been. She could not read, could listen to reading only for a

short time. There was, however, a firm determination to get well, and an unusual perseverence in the use of exercises to strengthen the muscles. She steadily gained, and finally was able to walk with only a cane for support, and could use her hands fairly well.

Case VI. Spasmodic action and loss of power in legs, deep reflexes absent, cerebral symptoms, lead in urine, — improvement.

Mr. B., age fifty-one, called to see me in 1890. He had been ailing for a year or more. He had exercised much in rowing and in other sports. He first began to grow weak in his legs and lost control of his rectum. He felt as if he had an iron on his back tied around tight. There had been hæmorrhoids seven years before and at that time he had a mucus discharge from the rectum. He grew weaker in his legs, there was numbness of rectum and back, a girdle sensation about the abdomen. His legs had a sleepy, prickly feeling. Once in a while there was pain in the back during the previous two months, sometimes pain in the legs, no lancinating pain. Once, while riding, he had a peculiar sensation in his rectum, and had to get out and walk. With his eyes shut he walked poorly. Patellar tendon reflex was absent.

He lived for four years where the drinking-water came through a quarter of a mile of lead pipe from a spring. After taking iodide of potassium, lead was found in his urine.

I did not see him again until February, 1891. He had had hæmorrhoids and these had been operated upon in the interval. He was no better, rather worse. There was the same girdle sensation about the body at the level of the ensiform cartilage extending nearly the width of the abdomen.

The legs twitch when he goes up stairs, so that it is sometimes easier to take two steps at a time. When sitting the legs are strongly adducted. He sometimes staggers in walking, legs twitch when he lies down. There is little or no pain. Numbness about rectum and genitals. Patellar tendon reflex was gone. There was no inco-ordination of hands, no disturbance of eyes, tongue was protruded straight.

There was a very marked hypochondriacal or hysterical element noticeable in the patient. He was extremely anxious about himself and inclined to dwell upon his disability. When he went out to his business he was better than when he staid at home. He would declare in the morning that he was worse, could not walk, could not go down town. With a little encouragement he would start off walking with difficulty with the aid of a cane, after getting a short distance from the house the cane would be put under his arm, and he would walk without it; or he would meet a friend and stand talking with him, forgetting all about his infirmity.

When I gave him a prescription for iodide of potassium, five grains to a dose, I cautioned him that it might be too much; he had unpleasant sensations from it but not such as are caused by the iodide. On reducing the dose he went on quite well. One Saturday he did not go in town to business. Sunday morning, after a very good night's rest, he had a very nervous spell, said he was in terrible agony, but after a little while he did not mention this again but said his family did not understand that he was continually losing the use of his limbs; he tottered and made terrible work in walking. In a short time a friend came whom he was pleased to see. Nothing more was heard about the walking and on Monday morning he went to town as usual.

When last seen he was better, having less of the girdle sensation, less bad feeling in his fingers and less numbness in the rectum and genitals, and was looking better in the face.

Case VII. Numbness, loss of power in legs, lead in urine, cerebral symptoms, — rapid recovery.

Mr. M. had been ailing two months previous to my seeing him. He had a pricking feeling in his fingertips and toes. He had had syphilis for which he had been treated for two years. He had had no skin affection, but four months after the first lesion he had a sore throat. He had formerly used spirits and tobacco.

About a month before he came under my notice he had had a fissure of the rectum for which he had used a large amount of lead as an injection. He had used canned food, his drinking-water had come from many sources; so it could not be learned how much lead he may have obtained from that.

Two months before the visit the numbness began, then his legs got heavy and he could hardly walk, then he was in bed two weeks with pneumonia. It was necessary for him to travel after this attack of pneumonia and the nervous symptoms were aggravated; the numbness was worse, the heaviness of the legs became worse, his knees and ankles became weak and it was difficult for him to walk. There was no numbness above the middle of the legs nor above the wrists, the arms were weak as well as the legs. There was no pain except twice in the middle of the forearms. He dragged both legs, the left the more. The pupils reacted to light, the left was slightly the larger; the tongue and the facial muscles acted naturally, there was a slight inco-ordination in the left hand, less in the right; patellar tendon reflex was absent. Sensation was blunted in the legs, higher it seemed normal, it was perceptibly delayed in the tips of the fingers, slightly delayed in the palm and much so on the palmer surface of the fingers, both hands alike.

After taking iodide of potassium, lead was found in his urine. He was given the iodide and made an unusually rapid recovery.

He was very nervous, almost hysterical, and anxious about himself, and probably appeared worse than he really was.

In April I saw him again: he said he was perfectly well and seemed so to be. The patellar tendon reflex was normal, he walked naturally, sensation was normal.

Syphilis might be suspected, but the dose of iodide was not more than seven grains, and it would be quite as unusual to have syphilitic neuritis recover so speedily with so small a dose as to have lead neuritis recover so in so short a time. Though he seemed very badly off when first seen, much of the unfavorable appearance was probably due to his extreme nervousness.

Dr. Minot reports a case of lead paralysis with rapid recovery.[1]

The prognosis in these cases of lead paralysis even when they seem very severe, is generally favorable to judge by these and similar cases. By a persistent use of iodide of potassium, with massage and electricity, even seemingly hopeless cases have improved or recovered. In a few cases, especially if not seen early enough, the termination is unfavorable. Serious cerebral symptoms are probably more unfavorable than the spinal and peripheral symptoms.

[1] Boston Medical and Surgical Journal, August 16, 1882, p. 155.

THE QUESTION OF A MIXED INFECTION FROM SYPHILIS AND TUBERCULOSIS.

BY JOHN T. BOWEN, M.D., BOSTON.

[The following formed part of a paper read before the American Dermatological Association at Richfield Springs, N. Y., in September, 1890. It was not published at the time, partly because some further investigations in the same line were contemplated, and partly because the coming of tuberculin promised an easy and definite solution of the question at issue. Tuberculin, however, has proved disappointing, not only from a therapeutic, but also from a diagnostic standpoint, for although it has been shown to have a relative diagnostic value, it cannot be relied upon as an absolute test. It has been thought proper, therefore, to put upon record the experimental studies embodied in this paper, which, although few in number, may serve a purpose in connection with others of a similar nature. Since the paper was written a short *résumé* of a dissertion on this subject by Leppenfeld, Würzburg, has come to my notice. The material was offered by a case of lichen syphiliticus, in which signs of tuberculous infection also were present. No tubercle bacilli were found in the tissue excised. A papule of the lichenoid eruption was inserted in the eye of a rabbit, but failed to produce tuberculosis.]

The histological characters of tubercle were, as is well known, considered for some time to be pathognomonic of this affection. The Langhans giant cell with its peripherally arranged nuclei, necrotic centre and protruding processes, was considered when taken in connection with the other characteristics of the so-called Wagner-Schüppel tubercle to make up a picture found only in true tuberculosis. Later, doubt was thrown on this view by the discovery of typical Langhans cells in other conditions.

Baumgarten, who has interested himself especially in this subject, published a series of papers, showing that he had found Langhans cells in gummatous nodules of the liver, in gummatous lesions of the dura, and in the tissue about vessel ligatures. Of six cases of gummatous orchitis, three were found to contain Langhans cells in large numbers. Hence, he concludes that Langhans giant cells can no longer be considered typical of tuberculosis. In 1884, however, in a paper published in Virchow's *Archiv*, Bd. 97, Baumgarten declares that he has modified his previous view somewhat, and that he regards those cases of syphilis where Langhans cells and the Wagner-Schüppel tubercle structure are present, as mixed forms of syphilis and tuberculosis. For the support of this view he adduces the following reasons:

(1) It appears improbable, from his own observations and those of others, that any other process besides tuberculosis that is developed spontaneously in the human body, possesses the power of producing Langhans giant cells or the structure of the Wagner-Schüppel tubercle.

(2) The subjects who present gummata in which the Langhans cells and the type of the Wagner-Schüppel tubercle are found, almost always shows unmistakable signs of a present or past tubercular infection.

(3) The gummata of syphilitic subjects who can be positively demonstrated to be free from tubercular complication, are never found to contain Langhans cells or the tubercle structure.

(4) The initial lesion of syphilis, as it is caused by the direct action of the syphilitic virus, and must be looked upon as the type of the specific affection of the tissues, never contains Langhans cells or a typical tubercular structure, but accords histologically with the pure gummata of skin, periosteum and internal organs.

In 1889, the subject was taken up anew by Michelson, who published an interesting article in Virchow's *Archiv*, entitled, "Is lichen syphiliticus the product of a mixed infection of syphilis and tuberculosis?" He publishes a sequence of three cases of small papular, lichenoid eruption in members of the same family, which proved to be examples of syphilitic lichen. Papules excised from two of these cases showed in the corium a typical Wagner-Schüppel tubercle structure, with Langhans giant cells. This accords with the anatomical researches of Griffini, who in 1875 described the papule of lichen syphiliticus as made up of nodules of tubercular structure immediately below the papillary layer, containing giant cells more or less branched and with peripheral nuclei, surrounded by a mass of epithelioid and lymphoid cells.

Neumann also has described and pictured giant cells in these papules of lichen syphiliticus that accord pretty well with the Langhans type.

Michelson, therefore, considers that there are grounds for questioning whether the syphilitic lichen be not a complication of syphilis and tuberculosis, as Baumgarten had suggested for those gummatous lesions where Langhans cells are found. This view he finds supported by the fact that the lichenoid syphilide is found in cachectic or tubercular subjects, and that it is especially obstinate and often relapses. His attempts to find tubercle bacilli in the excised papules, were, however, totally unsuccessful.

My attention having been called to the structure of the lichenoid syphilide by this article of Michelson's, an opportunity to study it was offered by what was to all clinical appearances, a typical instance of this form of specific eruption, which I will briefly describe.

Case A. T. D., male, nineteen, May, 1890.

Of good family history, had been well, with the exception of an abscess in the axilla a year and a half ago. Date of infection uncertain. Six weeks ago the eruption appeared on the back of the neck extending downward. Now presents a grouped, lichenoid eruption of trunk, arms and legs with a few large papules interspersed. The glands behind the ear are enlarged, and a long chain of epitroclear glands can be felt. Glands in groin not especially altered. No alopecia. Nothing abnormal found on physical examination of the chest.

The patient was treated with mercury by inunction and appeared ten days later with an iritis, whereas the cutaneous lesions had diminished.

July 8th. Eruption had practically disappeared, leaving only a few spots of pigment. Iritis much improved.

No possible doubt can be entertained, from the clinical appearances, and from the result of treatment, that this was a typical instance of lichen syphiliticus. No symptoms of tuberculosis could be found. The patient's appearance was, as is so customary in this form of syphilis, somewhat cachectic, but his general health improved rapidly as the eruption disappeared.

Histological Examination. — Several papules were removed from the back. The horny layer somewhat

thickened. In the centre of each papule examined, could be seen the follicular opening, enlarged and filled more or less completely with horny matter. The papule is seen to be caused by an infiltration of cells around the follicle in the upper part of the corium. The papillæ over this cell infiltration are effaced. The infiltration is made up of epithelioid and round cells with very numerous Langhans giant cells. There was no cheesy degeneration or suppurative change.

Sections from two different papules were examined for the tubercle bacillus by Ehrlich's method with much care. Forty-four sections from one papule and twenty-nine from another were searched with an absolutely negative result.

Inoculation Experiment. — May 21, 1890, two more papules were removed antiseptically and after being crushed and mixed with sterilized water, were injected into the abdominal cavities of two rabbits.

July 9th. The two rabbits, who had remained apparently healthy, were killed. Examination showed nothing abnormal, with the exception of some foci with a necrotic centre in the liver of one of the rabbits. The amount of fibrous growth at the periphery suggested a not very recent process, and there was nothing in their histological appearances to warrant the diagnosis of a tubercular process, nor could the bacillus of tuberculosis be detected.

This case, while it accords with the descriptions of Griffini, Neumann and Michelson as to the histological structure of the lichenoid syphilide — showing it to be made up of a cell structure that cannot be differentiated from that of tubercle — brings no support to the theory that this form is a combination of syphilis and tuberculosis. There were no tubercular symptoms, no bacilli were found, and inoculation experiments failed in two instances to produce tuberculosis.

Another instance of the presence of Langhans giant cells in a presumably syphilitic tissue was found in the following case:

Case B. E. H., male, age thirty-five, May, 1890. No history of previous troubles. For three years has had an affection of the scrotum which has repeatedly broken down into ulcerations. Was operated on in March, 1888, when he says a part of the right testicle was removed, and that the wound never healed entirely. He now presents an ulceration of nearly the whole scrotum, without apparent implication of the testicles, with somewhat indurated edges. In places are islets of firm, cicatricial tissue.

Patient was treated with iodide of potash in ten-grain doses three times a day, and the ulcers dressed with boracic acid ointment. In a week a great improvement had taken place, and at the end of three weeks the ulceration had entirely healed.

Histological Examination.— Pieces of tissue excised showed beneath the ulcerated surface, in the lower layers of the corium, a granulation tissue, and in almost every section one or more typical Langhans giant cells. No arrangement of the cell growth in clusters, such as is seen in the typical Wagner-Schüppel tubercle, was found in this case. Examination by Ehrlich's method of a small number of sections failed to detect a single tubercle bacillus.

Inoculation Experiment.— May 21, 1890, secretion and pieces of tissue were taken from the ulcer of the scrotum, were mixed with sterilized water, and injected into the peritoneal cavity of two rabbits. July 9th, the rabbits, who had appeared healthy, were killed, and post-mortem examination revealed nothing abnormal.

The diagnosis of syphilis, which could not be positively made from the clinical appearances, was rendered pretty clear by the result of treatment with the iodide of potash. The histological examination on the other hand was able to throw little light, as appearances were found that have been by some considered characteristic of tuberculosis. The failure to find the tubercle bacillus, and the result of the inoculation experiments, while they offer no conclusive proof that the affection was not of a tuberculous nature, may be accepted as negative evidence of considerable weight. There can be little doubt that the ulcer was a syphilitic gumma, and the presence of the Langhans cells accord with the reports of those who have observed these cells before in lesions of this nature. The negative result of the bacteriological search and of the inoculation experiments, brings no support to the view that there was a complication of syphilis and tuberculosis.

It may, then, be positively asserted, that, in certain syphilitic lesions, namely, in gummata and in the lichenoid syphilide, the histological appearances are not to be differentiated from those of true tubercle. Moreover, Neumann asserts that giant cells are to be found in disseminated papules, in the pustular and lichenoid forms, in tubercula cutanea, and in subcutaneous gummata. He is not, however, always careful to show that he means cells of the Langhans type, a point of the utmost importance, inasmuch as the term giant has been applied to large cells with several nuclei, which are found in a variety of conditions, and which bear little or no resemblance to the Langhans type. He speaks, however, in his paragraph on giant cells in such a way as to lead us to infer that he always has in mind the Langhans type, and this is besides shown in some of his illustrations.

In pathological conditions other than syphilis, however, there is as yet,[1] so far as I am aware, no record of the discovery of Langhans cells or of the Wagner-Schüppel tubercle structure, with the exception of a case of Baumgarten, where these appearances were found in a sarcoma of the tibia, the subject of which finally died with generalized abdominal tumors, so that the case was regarded as unique.

The theory that in these cases we have to do with a mixed infection of syphilis and tuberculosis has not as yet received other support than that offered by the histological appearances. No tubercle bacillus has been found, and, so far as I am aware, there are no records of inoculation experiments besides those above mentioned, which proved negative. Still it must be admitted that this is merely negative evidence, and of value only if repeatedly verified.

It may be asked, of what significance in a doubtful cutaneous lesion, is the demonstration of Langhans cells and of the tubercular structure? With our present data we may say that we know of but two affections, syphilis and tuberculosis, where the cutaneous lesions may offer these appearances, but that in cases where the search for tubercle bacilli is not made, or proves negative, we are seldom justified in making a differential diagnosis from the histological structure alone.

[1] Since the above was written an article has appeared in the Annales de Derm. et de Syph., by Barthelemy, describing a peculiar affection termed acnitis, in which giant cells of the Langhans type were found by M. Darier.

Clinical Department.

A CASE OF PULMONARY ŒDEMA SECONDARY TO NEPHRITIS, COMPLICATING PREGNANCY.

BY FRANCIS W. ANTHONY, M.D., BRADFORD, MASS.

On May 29th, 1891, I first saw Mrs. A. P. W., pregnant for the third time, a period of thirteen years having intervened since a miscarriage had followed soon after the birth of her first child. During the present pregnancy she had been troubled with shortness of breath, and of late had suffered from several attacks of what she supposed to be asthma; her hands, feet and legs had been swollen, her hands so much so that she had been unable to close the fingers.

I found the patient cyanotic, with great dyspnœa, breathing sixty-five times a minute. Coarse râles could be heard across the room, and a hasty examination of the chest showed an alarming œdema of both lungs. The pulse was 150 and weak. Cardiac examination was negative — a decision that was subsequently confirmed. Legs, feet, hands and face were swollen and œdematous.

Dr. M. D. Clarke, and later Dr. William Cogswell, saw her in consultation. They agreed with me that the trouble was in all probability nephritic in origin, and that the prognosis was bad. I remained all night, using counter-irritation over the chest and to the lower extremities, alcoholic stimulation and hypodermic injections of sulphate of atropia and of nitro-glycerine. Twice in the course of the night, the patient appeared moribund, becoming semi-comatose, and the pulse very rapid and irregular; but at five in the morning she became easier and obtained a little natural sleep.

At ten, my previous consultants, with Dr. L. S. Smith, endorsed the treatment I had determined upon as soon as the condition improved — manual dilatation and delivery. I had in the course of the night obtained a small specimen of urine, and found that it was opaque with albumen, and that the sediment contained finely granular casts.

With the valued assistance of Drs. Clarke and Smith I began dilatation at 10.20, the patient being placed across the bed in an almost upright position, the orthopnœa preventing any other. The os was unusually firm and resistant. I learned afterwards that her first labor extended from Thursday morning to Saturday night, and also that the os had been subjected to the cautery for some time within a few years. The patient had good pluck, and dilatation without anæsthesia was continued until, at 11.45, the tips of three fingers could be introduced. Anæsthesia was now necessary, and a more unpromising subject is rarely seen. Both the patient and her husband being fully informed of the circumstances of the case, chloroform was administered and the dilatation advanced as rapidly as possible, hypodermic injections of nitro-glycerine and of ether being administered meanwhile. At 12.40, after version, the child was delivered, some delay being caused in getting the arms as they went up above the head. The child, a female weighing four pounds, breathed after a little encouragement. Hot bottles were placed around the mother and hypodermic stimulation continued. She rallied well from the anæsthetic; and was left two hours later in the hands of a trained nurse.

The subsequent history of the case is uneventful. Several attacks of slight œdema rendered anxious the first few days, and cardiac failure threatened twice. Inhalations of oxygen improved the color when cyanosis became marked, but the hypodermic injections of nitro-glycerine proved all the way to give the quickest and most lasting aid. Elaterium and saline cathartics, as well as diuretics, were brought into service, and the respirations decreased in frequency and became of better quality while the amount of albumen in the urine gradually diminished. The child, while weak, still lives and takes Rotch's mixture with increasing strength.

On June 19th, no albumen could be detected, and a careful examination of several slides June 21st failed to bring into view any casts. The patient is about the house, and calls herself well.

Note. — The child lived twenty-nine days, and died of exhaustion. The mother is to-day (October 1st) still in excellent health.

Reports of Societies.

AMERICAN ORTHOPEDIC ASSOCIATION.

The Fifth Annual Meeting of the American Orthopedic Association was held at the Arlington Hotel, September 22–25, 1891. Dr. A. B. Judson, President; Dr. John Ridlon, Secretary.

FIRST DAY.

THE PRESIDENT'S ADDRESS.[1]

The President in his opening address, in referring to the limitation of the specialty, placed this as entirely voluntary, with an almost inexhaustible amount of work within these limits. He considered it well to recognize the lack of popular qualities of this department, not embracing brilliant and capital operations, and in a way, uninviting, inasmuch as the patients do not, as a rule, make perfect recoveries, but leave a residuum of disability.

It has its attractive features in dealing with realities, that is, with objective signs rather than in subjective symptoms, and in the following and aiding nature in her attempt to repair disease and give useful results.

He alluded to the death of Mr. Thomas, of Liverpool, and introduced Dr. A. J. Steele, of St. Louis, who spoke of the

ORTHOPEDIC WORK OF THE LATE MR. THOMAS.

Dr. W. R. Townsend, of New York, presented a paper on

UNIFORM NOMENCLATURE IN ORTHOPEDIC SURGERY,

in which he stated that in view of the success of the American Orthopedic Association, and the lead taken by America in this department, it seemed fitting for this Association to take the lead in defining what is Orthopedic Surgery, and establishing a uniform nomenclature. The aim of the latter is particularly to promote accuracy in properly classifying cases, which cannot be done by calling cases of synovitis, arthritis, or osteitis simply knee-joint disease, and this uniform division should be adopted by all hospitals. The pathology and symptoms of these various diseases are well enough understood, and there is no reason why, if these symptoms confuse, that some terms should not be agreed upon and adopted. We must all recognize one fault in not thoroughly recording our cases, and

[1] See page 318 of the Journal.

realize this in looking up hospital records. A uniform system would be greatly appreciated in such work.

It was moved by Dr. Vance and carried, that a committee be appointed to adopt some uniform nomenclature.

TWO CASES OF A PECULIAR TYPE OF PRIMARY CRURAL ASYMMETRY,

were presented by Dr. H. L. Taylor, of New York.

The first, a woman twenty-three years of age, showed a difference of two inches in favor of the left side, measuring from the anterior inferior spine of the ilium to the internal malleolus. Measuring from the head of the tibia, the difference was one and one-eighth inches. In the second, a girl of fifteen, there was over an inch of shortening of the left leg, and in this one as well, over one-half was in the tibia. These cases present the peculiarity of a greater size and strength of the shorter side. In neither was there any evidence of affection of the nervous muscular or osseous system, beyond the unequal development. In neither did true lateral curvature exist.

A CASE OF SPINA BIFIDA WITH PARTIAL MOTOR AND SENSORY PARALYSIS. DOUBLE EQUINO-VARUS AND PURULENT BURSITIS,

by Dr. H. A. Wilson, of Philadelphia.

At the age of four years the conditions were shown by a photograph, to be that of a colored girl of robust appearance, an only child of healthy parents and was born at full term. There was no hereditary tendency.

The spina bifida was in the lumbo-sacral region, and the pedicle measured nine and one-half inches in circumference. The tumor was hard and dense except in one spot about a half of an inch in diameter, where the covering was extremely thin, and the contents oozed on pressure and when the child sobbed. There was incontinence of urine and involuntary evacuation from the bowels, owing to the paralysis of the sphincters of bowel and rectum.

All the flexor and extensor muscles of both legs below the knees were paralyzed, and electro-muscular contractility could scarcely be perceived. There was complete anæsthesia of the right foot, ankle and calf, on the right side, which was present, although less marked, on the left. There was extreme double equino-varus, which firmly resisted manipulative correction. On both feet there were suppurating bursæ under the distal extremities of the maleoli upon which the child stood in her attempts to assume the erect posture. At intervals of three and four weeks abscesses developed in the labia majora. Attempts made to arrest the suppurating bursitis by incision and application of chemical antisepsis, was followed by a persistent refusal of the incised parts to cicatrize, and with no perceptible cessation of the suppuration. This failure of incised wounds to heal, contraindicated surgical attempts at correction of the equino-varus, and mechanical efforts were followed by tumefaction and threatened suppuration at the points where pressure was necessary, and therefore also abandoned.

Preliminary puncture of the spina bifida, as recommended by James Morton, prior to injection, was followed by convulsions. The child is still living, in a hopeless condition.

CONGENITAL CLUB-FOOT, WITH ABSENCE OF GREAT TOE AND CONTIGUOUS BONES OF THE INSTEP,

by Dr. T. M. L. Chrystie, of New York.

The description of the foot, and the result of the treatment, were presented by the writer. The case was one of congenital equino-varus, with absence, from arrest of growth, of first row of phalanges, shaft of first metatarsal and internal cuneiform bones, and of the two tibial and other three muscles attached here. The scaphoid was not fully formed. The treatment resulted in cure of the talipes, with acquirement of symmetrical gait in six months. Figures from photographs were used to illustrate the paper.

Dr. Wm. E. Wirt reported a

CASE OF DOUBLE CLUB-FOOT, DOUBLE CLUB-HAND, AND MULTIPLE DEFORMITIES,

which he stated was similar to the one recently reported by Dr. Gibney, but of a severer grade. There was double club foot and hand, rudimentary joints at the hips, knees, shoulders, elbows and wrists, and contraction of the plantar fascia. The motion at these joints was slight, and seemed limited by ligamentous and bony structures. There was the history of fright of the mother at the fourth month, and difficult labor with breech presentation.

In the paper

THE AFTER-TREATMENT OF EXCISION OF THE KNEE-JOINT,

Dr. John C. Schapps, of Brooklyn, reported two cases cured without fracture by means of the osteoclast and brace. In operating, it is important to bring the vertical axis of the two bones in a vertical line, so that the weight is transmitted vertically. In operating by excision, if all the diseased bone is removed, the limb usually soon becomes firm. Mechanical treatment should be continued at least two years.

GONORRHŒAL RHEUMATISM AND ITS TREATMENT, PRIMARY AND SECONDARY,

by Mr. B. E. Brodhurst, of London, was read by the secretary.

In this, the varieties and pathology of the affection was considered. While effusion is rapid, and pain severe, suppuration never occurs. Several joints are often attacked simultaneously, and one frequently remains impaired. The treatment in fresh cases consists of external applications, and the inunction of mercury was advised. In old cases there are adhesions and usually some flexion. The treatment is to break up these adhesions by force, used in the direction of extension, which will not cause injury. The writer stated that he had operated in over a thousand cases of this affection, and with no bad results.

Dr. E. G. Brackett, of Boston, read a paper on

ATROPHY IN JOINT-DISEASE[2]

in which the different theories regarding the causation of this, were considered. That having had the most general acceptance is the reflex theory of Vulpian, which supposed it to be the direct result of the irritation of the diseased joint, on the nutrition through the nervous system. The theory is inadequate as it does not explain the large number of cases. There is no constant relation between the severity or duration of the disease, and the degree of the atrophy, and this instead of being confined to the part affected, is distributed over the whole limb. The lack of development, which appears later, is subject to the same distribution and influence. The amount of both wasting

[2] To appear in full in an early issue of the Journal.

and the late atrophy is more dependent on the amount of use, and bears a relation to this. The results of a series of observations to illustrate this were given.

Dr. A. M. Phelps, of New York, in a paper entitled,

SOME LATERAL TRACTION FIXATION HIP SPLINTS,

advocated the following principles: that extension and fixation are necessary; that spasm is always present, and this involves the adductors and glutei. To overcome the spasm of these, lateral traction is necessary. That ankylosis is the result of pathological causes, not of prolonged fixation. The patient should never be allowed to step on a splint, but should have rest in bed until deformity and symptoms have disappeared, then use crutches and high sole. The joint should remain fixed, and passive motion prohibited until cured. In children under three and a half years of age, the plaster-of-Paris portable bed should be employed.

The following papers were read by title:

ON THE BEST MEANS OF PREVENTING A LOOSE JOINT OR DANGLING LIMB, AFTER RESECTION AT THE SHOULDER-JOINT, WITH AN ILLUSTRATIVE CASE,

by Dr. W. R. Whitehead, of Denver.

ON THE USE OF THE WRENCH IN THE TREATMENT OF CLUB-FOOT,

by Mr. Robert Jones, of Liverpool.

OPERATION ON THE CONCAVE SURFACE IN TALIPES EQUINO-VARUS,

by Dr. R. E. McKenzie.

THE DIAGNOSTIC AND PROGNOSTIC VALUE OF HIGH TEMPERATURE IN CHRONIC JOINT DISEASE,

by Dr. Robert W. Lovett.

ON THE TESTS FOR RECOVERY FROM JOINT DISEASE,

by Mr. Robert Jones.

APPARATUS FOR MAKING TRACTION,

by Dr. Wm. E. Wirt.

SECOND DAY.

The first paper was presented by Dr. John Ridlon, of New York, on

SYPHILITIC POTT'S DISEASE IN CHILDREN.

The writer referred to the reluctance, which, a few years ago, he found among medical men to accept this affection as an independent disease. Since that time he has had opportunity to further observe the subject, and is convinced of the existence of this disease. It is usually hereditary, but its presence does not necessarily incriminate either of the parents, as it may have been transmitted from the grandparents. The onset and development is very slow, except in the spine, where, from its location, its existence is not manifested until considerable progress has been made, and thus its onset here may apparently be rapid. The abscesses usually disappears when the mercurial treatment is pushed. Spondylitis under three and a half years of age, and existing with other joint affection, he considers to be very probably specific. The most common accompaniment is other joint affections; the least common specific manifestation is skin lesion. The treatment is mechanical and medicinal, the latter, mercury and iodide of potash.

Dr. Roswell Park presented a paper entitled

A STUDY OF ATROPHIES,

which was in the main historical, the principal monographs, on which it was based, extending back to the early part of the present century, among the authors quoted being Curling, Bennet, Verneuil, and Ollier and his pupils. Great importance was given to the work of the latter. He established that the common cause of hypertrophy of bone is irritation. The causes of atrophy he divided into those by which there was produced destruction of tissue which concerns or favors their growth; and gradual failure in the evolution of such tissue; mutilations of bone almost always produce arrest of development, not alone in the bone injured, but in the parallel bones. Ollier laid particular stress on the effect of functional inertion or atrophic elongation. Growth is of two kinds, laterally and longitudinally, and when the one is interfered with, there is an apparent elongation, seen sometimes in the long bones. The occurrence is important, rather pathologically, than cliuically. The writer spoke in high praise of this work of Ollier, with the views of whom, the paper had particular reference.

Dr. T. Halsted Myers, of New York, read a paper on

POTT'S DISEASE AND PREGNANCY,

in which he referred to the diminished size of the abdominal cavity in vertebral disease, also to the local hyperæmic condition during this state, and the necessary detrimental influence of this on a vertebral disease. An examination of the records of Maturnity Hospital showed a relatively high mortality when this disease existed. In seven cases, in which the disease developed during pregnancy, three died and three were left paraplegic. The practical question is the effect of the pregnant state on this disease. The conclusions are, that in cured cases no harm is done, and the disease is not rekindled; but in uncured cases, the danger is considerable, and the writer would advocate an early termination of the pregnancy.

A paper on

PARAPLEGIA IN POTT'S DISEASE,

was read by Dr. E. G. Brackett, of Boston.

One method of double extension with fixation was considered, and the results, with cases, given. The conclusions were: That recovery may be looked for even after its persistence for many months, and when sensation and the spincters are involved, that the treatment of extension and fixation is often attended by decided improvement and should be given a thorough trial; that the most careful attention is necessary to the details in securing a well-adapted support to the back and the continuous and even extension; that the rest should be persisted in, not only until all evidence of disease has disappeared, but until the return of the use of the limb is well established.

Dr. Albert Hoffa, of Würzburg, presented a paper entitled

PRESSURE-MYELITIS IN POTT'S DISEASE.

The affection is the result of the tubercular process in the vertebræ, and is for a long time confined to the epidural space, and is essentially a pachy-meningitis. Finally the process may pass through the dura, and

the cord itself then becomes involved. At one stage there may be an œdema, later the membranes become thickened. The first symptoms are of functional disturbance of the cord, and are due to the pressure and from an anæmia from this pressure interfering with the natural flow of lymph. When the pathological process has extended through the membranes and involved the cord, the condition is a true sclerosis, and may result in the degeneration of the nerves.

The object of treatment should be to confine the exudation to the smallest area possible. This is best accomplished by rest and extension. It is difficult to reach the epidural space by operation, and the results are not encouraging. The writer doubted if the operation had a brilliant future, and thought it should be confined to those cases in which the disease involves the articular processes as well as the bodies of the vertebræ.

ABSCESSES IN POTT'S DISEASE.

Dr. W. R. Townsend, of New York, read a paper in which he considered the method of treating these abscesses, and a valuable series of statistics were given in connection. If all those cases treated by the expectant method did well, the wisest course would be evident; but while some of these improve under this method, in others the general health fails, and the result is not satisfactory. If, on the other hand, we could be sure that by operation the evacuation would be complete, and all residuum cleared away the best method would be equally evident, but in a certain number of cases, infection takes place.

In 19 cases of abscess treated expectantly, 11 disappeared, three opened, four increased, one remained *in statu quo*. In 14 operation cases, 11 became infected later, and three did well. In 21 cases allowed to open spontaneously, 15 did well, and six badly. The writer advocated the expectant treatment so long as the patient was doing well. Resorption takes place more often than is usually considered, and can be helped by use of the aspirator, and the injection of iodoform. When the health fails under this plan, evacuation should be resorted to. Fixation in all cases is essential.

BILATERAL LUMBAR ABSCESS, WITH CASE,

by Dr. James K. Young, of Philadelphia.

Dr. Young presented the history and photographs of a case which illustrated the results of bilateral lumbar abscess accompanying Pott's disease in a child aged four years. One abscess was aspirated twice, the other was allowed to break spontaneously; and with strict antiseptic dressings the child has now recovered.

He referred to the influence of the seat of the lesion and the importance of the fascias in determining the course and exit of spinal abscesses generally, and particularly of the psoas fascia and the lumbar fascia in lumbar abscess. If the abscesses find exit upon the surface of the vertebræ anterior to the attachment of the psoas fascia, it will terminate by burrowing along the great vessels or become an iliac abscess; if it open posterior to the psoas sheath, it will burrow backward and laterally along the middle layer of the lumbar fascia, separating the quadratus lumborum from the internal oblique, through the internal oblique and between the external oblique and latissimus dorsi to appear at the outer border of the erector spinal muscles. This was the course in the case presented; and he suggested the division of lumbar abscesses into external and internal, their relation to the sheath of the psoas fascia and the anterior layer of the lumbar fascia determining their position.

THE BENIGN COURSE OF ABSCESSES IN POTT'S DISEASE UNDER EFFICIENT MECHANICAL TREATMENT.

Dr. Newton M. Shaffer gave by abstract his views of this treatment. It presupposes the most careful mechanical treatment, and his remarks applied only to the large spinal abscesses, where the health had already suffered, and where the endurance of an operation is in question. His largest record of deaths in spinal abscess has been after incision in such cases, and as these often do so well if true mechanical support is given, that he would advocate this course. Cases were cited illustrating favorable results with this method.

Dr. Ap Morgan Vance, in his paper on

THE ASPIRATOR IN ORTHOPEDIC PRACTICE,

advocated the withdrawal of the fluid by the needle, and the application of firm pressure. Under this method the fluid soon becomes serous, and the cavity finally ceases to refill. Occasionally it becomes caseous and will not pass the needle.

In the discussion of these papers Mr. Howard Marsh stated that in England, the feeling was steadily and strongly becoming in favor of operating on these abscesses early and freely. He had tried the various methods, of letting them alone, of aspirating, and of freely incising, and prefers the latter. By attention to asepsis, and the use of pressure, the danger is not great, and he would say that about four or five per cent. only, of the cases thus treated did not do well.

He also stated that he felt that the presence of the abscess tends to continue the disease, and for this reason, it is good practice to evacuate early.

Dr. Henry Ling Taylor read a paper on

THE VALUE OF MECHANICAL TREATMENT IN OLD AND NEGLECTED CASES OF POTT'S DISEASE.

There is a ten-fold object in the mechanical treatment of Pott's disease, to provide rest and fixation to the spine, and to promote the hygienic conditions, and to as far as possible, prevent or rectify the deformity. The course of the disease is often extremely slow, and in many old and deformed cases, the knuckle keeps on slowly increasing, or after many years of immunity, the disease is lighted up by a strain and fall. Even these old and desperate cases, both in children and adults, often respond kindly to mechanical treatment. The figure and carriage may often be improved, and when this is possible, increase may often be prevented, and health restored by careful mechanical treatment.

The following communications were read by title:

RACHITIS IN ADOLESCENCE,

by Dr. Bernard Bartow, of Buffalo.

CONGENITAL DISPLACEMENT OF THE HIP, WITH NEW APPARATUS FOR ITS TREATMENT,

by Dr. A. M. Phelps, of New York.

THE DIAGNOSIS OF POTT'S DISEASE,

by Dr. Robert W. Lovett, of Boston.

THE DIFFERENTIAL DIAGNOSIS IN POTT'S DISEASE,

by Dr. George W. Ryan, of Cincinnati.

ABSCESSES IN POTT'S DISEASE,

by DR. HERBERT L. BURRELL, of Boston.

THE EVACUATION OF SPINAL ABSCESSES WITHOUT DRAINAGE,

by MR. GEORGE A. WRIGHT, of Manchester, Eng.

THE MECHANICAL TREATMENT OF POTT'S DISEASE, WITH AN EXHIBITION OF APPARATUS,

by DR. A. M. PHELPS, of New York.

(To be continued.)

ASSOCIATION OF AMERICAN PHYSICIANS.

THE SIXTH ANNUAL MEETING, HELD IN WASHINGTON, SEPT. 22-25, 1891.

(Concluded from No. 17, page 444.)

FOURTH DAY.

THE CONDITIONS AND PROSPECTS OF THE LIBRARY OF THE SURGEON GENERAL'S OFFICE, AND ITS INDEX-CATALOGUE.[1]

DR. JOHN S. BILLINGS, of Washington, presented a paper on the above subject.

SEQUEL TO A CASE OF SLOW PULSE,

by DR. D. W. PRENTISS, of Washington.

This report completed a case of slow pulse previously reported to the Association. The patient was brought before the Association for examination both last year and the year before. The man, aged fifty-three years, had a pulse ranging from 11 per minute to 40 per minute for two years and was the subject of frequent attacks of syncope. No disease of heart or other organs could be discovered. The last reports of the case was made in May, 1890. From May 24 to July 2, 1890, the symptoms continued as mentioned, the pulse ranging from 18 to 21 per minute, with frequent spells of syncope; towards the last almost constant delirium, and for the last few days he wandered restlessly about the house in constant fear of being shot.

July 4, 1890. More delirious and restless than usual; thought several parties were trying to kill him. Screamed with terror "murder," "fire," until the neighborhood was alarmed. Was induced to lie down on the bed. His wife left him for a few minutes and on returning found him dead.

Autopsy.— Autopsy was made by Dr. R. T. Edes, seventeen hours after death. Heart rather large and firm, lungs being well dilated, it is probable that no more than the normal surface of the heart came in contact with the thoracic wall. Neither the aorta nor the coronary arteries were atheromatous. Brain and upper portion of spinal cord healthy to gross appearance. On the right side, the upper cervical ganglion of the sympathetic, the lower cervical ganglion, a portion of the thoracic sympathetic, a portion of the splanchnic at semi-lunar ganglion were removed. On the left side the same portions, except the upper ganglion and the thoracic sympathetic. All were normal to the naked eye. On dissection of the heart, the left pneumogastric appeared normal until the region was reached where it bends under the arch of the aorta to give off the recurrent laryngeal. Here several of the strands appeared somewhat less clearly defined through the surrounding connective tissue, which, at this point, was more strongly adherent. There were fusiform enlargements of the several cords. One of these was on a cord going downward to form the œsophageal plexus; others were on the bend of the recurrent laryngeal just below the artery. At this point the recurrent laryngeal gives off branches which connect with the cardiac plexus. The muscular substance of the heart was firm and not fatty, walls of both ventricles thickened, those of the right perhaps more in proportion to its usual thickness. The fusiform enlargements at the point of separation of the cardiac branches from the recurrent laryngeal were so much injured in the process of dissection that the microscopic examination disclosed nothing. The other cords and ganglia were normal. The intrinsic cardiac ganglia were not found. The pneumogastric nucleus in the medulla showed no lesion. The medulla as a whole appeared congested.

DR. PEPPER thought the report of Dr. Edes might be considered a negative one.

DR. EDES thought that the finding of the enlargements rendered the report not entirely negative.

DR. PEPPER alluded to the fact that nearly all the members who commented upon the case last year thought the patient was the subject of arterio-sclerosis, the radials being hard and of increased tension, yet the autopsy revealed no material changes in the coats of the vessels.

DR. WELCH stated that similar fusiform enlargements are present normally on the cardiac nerves, and they are inconstant in their distribution, and it is possible that the conditions described by Dr. Edes might correspond to some normal arrangement of the enlargements on the cardiac nerves.

EXHIBITION OF SPECIMENS OF HAIR, SHOWING CHANGE OF COLOR FROM INTERNAL USE OF PILOCARPINE AND JABORANDI,

by DR. D. W. PRENTISS, of Washington.

The first case was that of a young lady who up to twenty-five years of age had light blonde hair. She was treated with hypodermic injections of pilocarpine, one-sixth of a grain two or three times a week, for uræmia from suppression of urine. In two weeks time her hair was distinctly brown, and in six weeks it was black. This was ten years ago. The color of the hair at this time is still black. Another case was an old lady suffering from interstitial nephritis; her hair was quite white. The principal symptom that gave her distress was itching of the skin from dryness. For relief of this, fluid extract of jaborandi was given. This gave relief for nearly a year. In the course of eight or nine months her eyebrows were black, and after that her hair in patches over her head became black, and new hair was growing all over the scalp. Before this new growth became of any length she died.

GRAVE FORMS OF PURPURA HÆMORRHAGICA,

by DR. J. H. MUSSER, of Philadelphia.

Dr. Musser referred to the classification in use at the present time of idiopathic and symptomatic purpura; the former including simple rheumatic and malignant forms, or peliosus rheumatica and morbus maculosis werhlhofii; the symptomatic varieties including scurvy were also detailed. Reference was also made to the monograph of William Koch, recently published, who claims that scurvy and various forms of purpura are identical and of infectious origin. Dr. Musser was not able to see, viewing the cases from a

[1] See page 344 of the Journal.

clinical standpoint, any justification of the infectious nature of these diseases or even their affinity. Koch himself, did not prove absolutely the bacterial origin, nor define the micro-organism that was the cause of the disease. The observations quoted from Fagge, were referred to as the bacterial origin.

Reference was made to the relation of purpura symptomatically to affections like urticaria and its relations to rheumatism. Five cases were reported by Dr. Musser, illustrating grave forms of this disease. The first case reported was that of a woman who suffered from hæmatemesis for several months. Its origin was obscure, and, in fact, could not be determined until further development of the case. After a period of some failing health, suddenly purpura developed. Subcutaneous hæmorrhages first were seen, and then hæmorrhages of the mucous membrane. The patient died suddenly with symptoms of internal hæmorrhage: and at the autopsy the death was found to be due to large hæmorrhage behind the retro-peritoneal space, and in the œsophagus a small pin-point communication with the enlarged veins was found, which showed the source of hæmorrhage. The second case was also one of excessive gastric and intestinal hæmorrhage, and general subcutaneous hæmorrhages with grave symptoms. The boy recovered. The third and fourth cases presented many symptoms in common. With the development of purpura, with severe joint complications, in each case, excessive œdema in different portions of the body, particularly the extremities and eyelids, was observed. In the first case was also œdema of the uvula, which led subsequently to sloughing and complete destruction of it. The patient had some fever, and there was a question whether this uvula inflammation was not of deep origin. He recovered after a tardy convalescence, although, at the time, recovery was rendered doubtful by the presence of large murmurs in both valve areas of the left heart, which appeared to indicate the possibility of an ulcerative endocarditis. No doubt these murmurs were due to old valve lesions. In addition to the symptoms purpura and œdema in the second case, with severe joint symptoms, there was also œdema of the uvula, with gangrene and sloughing, as well as large sloughs of the skin of the scrotum and penis. This patient recovered. In both the blood was examined carefully. At no time was there much reduction in the red cells. In one there was a notable reduction in the hæmoglobin, falling as low as twenty-seven per cent. at the height of the disease. As convalescence became established the hæmoglobin gradually increased. Bacteriological studies were made of the blood, but without results of any value. The fifth case was most acute in its course. The patient, a girl of twenty-three years of age, was suddenly seized with severe hæmorrhage from the stomach followed by intestinal hæmorrhage. One day, after the onset of the gastric hæmorrhage, subcutaneous hæmorrhages took place and joint symptoms arose. The symptoms were attended with severe headache and marked hysteria. On the fifth day a severe conjunctivitis and iritis developed. The temperature on this day, which had previously been about 104°, increased, and with the increase in temperature, delirium, followed by coma, ensued. The hyperpyrexia became more and more pronounced, and death ensued at the end of twenty-four hours with a temperature of 108°.

Dr. Pepper related two grave cases seen by him last spring in school-children of about eleven and thirteen years. There were extensive hæmorrhages in both cases, with sloughing. In both cases complete destruction of vision in the left eye occurred on filling of the globe of the eye with blood. Another case was in the person of a lady of about thirty. There was the characteristic eruption, then sudden hyperpyrexia, (105° to 106°), extensive outbreaks of petichiæ, and the largest cutaneous hæmorrhages ever seen by Dr. Pepper. There was immediate subsidence of fever with absorption and cure without sequelæ.

Dr. D. W. Prentiss spoke of an exceptionally grave case which he had presented to the Association last year. The case was marked with periodic exacerbations. The patient had violent symptoms of purpura with joint affections and with intense suffering. He would recover from an attack in ten to fourteen days, and in about six weeks the symptoms would recur with great violence. He had hæmorrhages in different portions of the body, — from the bowels, from the bladder, under the skin, although never from the lungs. Sloughing occurred subsequent to hæmorrhage in the skin of the abdomen and that of the prepuce. He had symptoms simulating peritonitis and enteritis. Two members of this Association suggested phosphorus as the best treatment. Up to that time arsenic had been used. He was put upon phosphorus. The relapses occurred with lengthening intervals until they stopped altogether and the boy entirely recovered.

Dr. Graham, of Toronto, said that Dr. Jacobi and himself had suggested the phosphorus. He uses it in the form of phosphide of zinc. The only fatal case under his observation was one in which death took place as the result of an enormous clot that formed in the bladder, distending it so that the fundus reached the umbilicus. In this case phosphorus was not used.

The following officers were elected: President, Dr. Henry M. Lyman, of Chicago; Vice-President, Dr. George Ross, of Montreal; Secretary, Dr. Henry Hun, of Albany; Treasurer, Dr. W. W. Johnston, of Washington, D. C.; Recorder, Dr. I. Minis Hays, of Philadelphia.

NEW YORK COUNTY MEDICAL ASSOCIATION.

At a meeting held October 19th, Dr. Frederic S. Dennis exhibited a remarkable case of

NON-TRAUMATIC ACUTE SUPPURATION — OSTEOMYELITIS.

The disease was located in the tibia, and a favorable result, saving both the life of the patient and the limb, was achieved by making an incision four inches long, cutting down into the medullary cavity of the bone, and removing all the pus and diseased tissue. In this case, the presence of the cause of the septic intoxication, the microbe designated *staphylococcus pyrogenes aureus*, was demonstrated by Dr. E. K. Dunham at the Carnegie Laboratory, and pure cultures of the microbe were obtained from the pus taken from the diseased limb. Specimens of both the microbes and the cultures were shown.

Dr. Dennis also presented several other interesting surgical cases, among which was a case of

NON-TRAUMATIC ACUTE SUPPURATIVE ARTHRITIS OF THE KNEE-JOINT,

which was found to be of gonorrhœal origin. Gono-

cocci having been demonstrated in pus taken from the joint, it was decided not to open the latter widely, but to evacuate the pus, and keep the parts fixed by Buck's extension apparatus. Internally, large doses of iodide of potassium were given, and the result was very satisfactory. At the time the case was shown there was still considerable enlargement of the knee, but there was good motion in the joint.

Another case was that of a patient who, four years ago, had an

ANEURISM OF THE RIGHT POPLITEAL ARTERY,

which was cured by Dr. Dennis by means of compression with an Esmarch bandage, for an hour and a half under ether. Some two years afterwards an aneurism of the left iliac artery developed, and more recently the sac seemed to have burst, producing enormous distension of the limb, the swelling extending down to below the knee. The existing condition of affairs called for some active measure, and Dr. Dennis said he had not yet decided whether to amputate at the hip-joint or perform laparotomy and ligate the iliac artery.

Recent Literature.

A Text-Book of Physiology. By M. FOSTER. Fifth Edition, Revised. Part IV. London and New York: Macmillan & Co. 1891.

This part completes the new edition of "Foster," the appearance of which was noted in this journal at the time. The previous parts have shown a most painstaking care in bringing the subject fully up to date. The number of pages has grown from 770 to 1356 and of this increase nearly one-half may be credited to the discussion of the central nervous system. The same admirable spirit that has hitherto characterized this text-book is manifested in this last edition which is still easily the leading English book on the subject.

The part before us discusses the special senses, reproduction, and "the chemical basis of the animal body." It is practically a reprint of the corresponding portions of the previous edition although coming out eight months after the preceding part. As to the special senses and reproduction this reprinting does little harm since comparatively slight progress has been made in these subjects. It is, however, a serious defect to have the "appendix" a literal reproduction of the physiological chemistry of the edition of 1883. This defect is lessened for the teacher and pupil by the recent appearance of Halliburton's book on this subject and the regret of the reader is modified by the hope of the author that a new edition may begin to appear this autumn. It would be a great advantage if some arrangement could be made to insure the appearance of the parts with more promptness than has been shown in getting out the present edition.

We would also urge that references should be made to the more important investigations. The author gave up this practice because he felt that many students derived no benefit from the presentation of authorities which they either neglected or learned by heart. On the other hand, students seem to fall into the error of attributing everything to Foster which is not only too great a burden for that genial author but also unfair to the patient investigator who often gets no other recognition.

THE BOSTON

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THE VISION OF RAILWAY AND NAVAL EMPLOYEES.

IN the Section of Ophthalmology at the annual meeting of the British Medical Association, held in Bournemouth last July, a discussion took place on the vision of railway employees. The papers read and remarks made were so eminently practical that we quote the following from the reports.

Mr. Beaumont, surgeon to the Bath Eye Infirmary, said: "The method of testing the vision of railway officials appears to be insufficient and inaccurate. This opinion is founded on a knowledge of the method adopted by the railway companies, and confirmed by practical experience gained by attending many railway servants suffering from refractive and pathological anomalies of vision." He gives several cases of extreme defective vision passed by officials, which would very properly frighten the passengers on a train if they knew these men were driving their engine. He says very forcibly, "It appears to be useless to attempt to get any voluntary reform from the railway companies"; and insisted that the tests should always be applied by qualified medical men, laying down the standards which should govern their decision.

Mr. McHardy, professor of ophthalmology and ophthalmic surgeon at King's College, London, gave a very practical paper. He said: "Before this audience I may be excused for merely stating as a truism that Holmgren's test for the detection of subnormal color perception, conducted by means of specially selected skeins of variously colored wool, practised in precise accordance with the directions clearly laid down by its author, discourages deceit, and may expose wilful imposture. . . .

"Practical tests (so called) to detect subnormal color perception, etc., by questioning men as to the color or significance of signal lamps or signals, are absolutely impracticable, and must prove misleading and ruinously costly in application, besides inviting and encouraging deception and discontent." After very clearly showing the practical results from defective vision, he

adds: "I hope that with a minimum use of technicalities I have stated sufficient to show that the efficient control of railway men's eyesight can alone be conducted by ophthalmic experts. . . . This was recognized by our revered master, Professor Donders, who in December, 1879, wrote: 'I most willingly testify that it is my full conviction that only medical experts — ophthalmic surgeons — should be employed in testing color perception and acuteness of vision.' From a long letter from Professor Holmgren, dated December, 1879, to Dr. Joy Jeffries, who has so usefully identified himself with this subject in the United States, I deem the following especially worthy of record: 'In Sweden, railway surgeons have been practically and specially instructed *de visu* by me, and we have every reason to be satisfied with this. There are many cases which no railroad official can detect or decide, and not even the ordinary railway surgeon can be sure of. . . . The time has long passed for knowing everything; division of labor is a law of our times, proving its advance.'"

Mr. McHardy goes on to say: "I have been led to supplement my knowledge and experience as an oculist by personal, practical observation from the foot-plate of ordinary express, passenger and goods locomotives, in all kinds of weather and all states of atmosphere. . . . I have gained experience also, from direct experiment in the most practical way, as to the differential visibility of railway signals to eyes with normal focus, with varying degrees of longsightedness, shortsightedness, and astigmatism; for, having become well acquainted with the signals, etc., on some eighty miles of railroad, I never travel with my eyes handicapped to known degrees by glasses. A comparison of the diaries of my foot-plate experiences shows that as nearly as possible the recognizability of railway semaphore signals is in distinct accord with the observer's degree of acuteness of vision as measured by Snellen's standard. . . . I am mindful of the extremely imperfect and dangerous manner in which government departments here attempt to control eyesight while professing to be strict. I refer, of course, to the authorities responsible for the eyesight of the *personnel* of the Royal and Mercantile Navies of this country."

Mr. George Mackay, assistant ophthalmic surgeon to the Eye Dispensary of Edinburgh, reports in detail with reference to examinations of employees on four separate railroads. His summary is this: "I have given here, as briefly as possible, the method at present in use for the determination of the visual acuteness of 4,160 firemen and engine-drivers, more than 2,000 guards, and over 2,600 signalmen employed in 3,056 miles of railway. It will be admitted that the visual power of the greater portion of these men is very inadequately tested, and I hope that the outcome of our meeting to-day may be the appointment of a committee to consider the best recommendations which ophthalmic surgeons can make to the railway managers with a view to a reformation."

Dr. W. A. Brailey, ophthalmic surgeon to Guy's Hospital, being called upon by the chair, said, that a Committee appointed by the International Medical Congress of London, 1881, "having the great advantage of the services of the distinguished Professor Donders as President" reported proposed standards of requirement which the Congress voted on in approval. The Ophthalmological Society of the United Kingdom subsequently appointed a committee, on which was Dr. Brailey, who interviewed the Secretary to the Board of Trade. He adds: "True, we met with no active opposition to our proposal, but official immobility was too much for us, and no practical good resulted."

The following resolution proposed by the President was adopted, "That a committee, with power to add to its number, be appointed to promote the efficient control of railway servants' eyesight in the United Kingdom, and to report thereon from time to time to the British Medical Association; that such committee be designated the 'Committee on the Control of Railway Servants' Eyesight.'" Ten well-known ophthalmic surgeons were appointed, who had identified themselves with this movement. Some doubt was expressed in the Section as to whether their committee should await the report of the special committee of the Royal Society asked for by the Government more than a year ago.

An editorial in the *British Medical Journal* of August 29th, advocates most strongly the results and action of the Section of the general Society, and shows the absurdity of the present tests as used on the railroads, etc. One sentence we quote, as it is applicable here as in Great Britain: "Unfortunately, when this subject is broached, there are certain medical men who, instead of advancing their views where they can be adequately discussed, take the opportunity of writing a signed letter to the lay press. Railway directors are thus led to believe that there is a real difference of opinion among authorities as to the proper tests to be employed, and not unnaturally delay to take any action; at the present time, moreover, they have a further excuse for delay in the fact that a committee of the Royal Society has the whole question under consideration."

Our readers may not know or recall the fact that from silly articles in the press a considerable stir on the subject was made last year in London, resulting in Mr. R. Burdenell Carter, a distinguished ophthalmic surgeon, being called upon as an expert to address the Society of Arts in London, in consequence of which he was asked to lecture at the Royal Institution on "Color-Vision and Color-Blindness," which he did May 9th, before a very distinguished audience. It finally came before the Royal Society, where the practical experts were most fully sustained. The Government followed this up with a request for a report on defective vision and color sense, on which their action would be based. That report is still awaited from the committee, which consists of the President, Sir G. G. Stokes, Lord Rayleigh, Professor Michael Foster, Captain Abney, Francis Galtier, Professor Church,

Dr. Wm. Pole, and Mr. R. Burdenell Carter, whose names guarantee practical and scientific investigation, and recommendations independent of "ignorance, prejudice and pecuniary considerations," that seem to constantly block all attempts to control defective vision on land and sea for the saving of life and protection of property.

ON THE TREATMENT OF PERITYPHLITIS.

Jumon in *Médecine Moderne* somewhat exhaustively reviews the treatment of perityphlitis. The management of this disease, he says, has been greatly modified of late years; it has become chiefly surgical. But it is no less true that at the onset it should be purely medical. Antiphlogistics, refrigerants and opiates should be employed; everything which excites intestinal action should be avoided — even the saline laxatives and lavements so much vaunted by certain authorities. On this point we remark there is anything but agreement, though all admit that active catharsis is to be deprecated.

At Nothnagel's clinic, in recent cases and during the first two or three days, much reliance is placed on leeches and bladders of ice. As many as eight or ten leeches are applied over the seat of pain and swelling, and the oozing of blood is encouraged by warm fomentations after the leeches drop off. The result of this treatment appears to be encouraging. After the bleeding ceases, the ice-bladder is applied. If this is not well borne, warm poultices or fomentations are substituted. Later on, the abdomen is painted with a mixture of iodoform-collodion, tincture of iodine, and tincture of galls, of each equal parts, and frictions with green soap are resorted to, if absorption of the exudation is slow. Quinine and suitable nourishment is given; opium is prescribed in some, though not in all cases. If the pain is intense, hypodermic injections of morphine are employed. When the inflammation is subdued, and during the period of amelioration, laxative lavements are employed in cases where the bowels are confined. If there still remains sensibility to pressure and a slight resistance, an occasional massage with green soap is ordered.

Vollert cites a case occurring in Nothnagel's clinic where, despite symptoms of the greatest gravity, the patient recovered under purely medical treatment. It was a case of perityphlitis with diffuse peritonitis complicated with pyæmia. The temperature went up on several occasions to 45.5° C. (114°F.?); the patient had frequent chills, and the spleen was tumefied. Quinine, salicylate of soda, and antipyrine were given to combat the fever. The patient got completely well at the end of five months.

Out of thirty-four cases, three were fatal. Death in the first patient was due to perforation of the appendix; in the second, to ulcerated medullary cancer of the cæcum; in the third, to intestinal concretions with perforation of the appendix, diffuse peritonitis, followed by perforation of the diaphragm, ulceration of the pleura, and hyperpneumothorax of the right side.

What are the indications for operating in perityphlitis? Jumon, in the article aforesaid, replies that there should be no hesitation as soon as there is certainty of the existence of an abscess. An operation ought not to be thought of during the first few days. He has, in fact, known cases in which the most acute symptoms — high fever and violent pain in the ileo-cæcal region — have accompanied the development of a voluminous tumor, and yet all these inflammatory phenomena have disappeared in a few days under an "antiphlogistic" treatment, and even expectancy. Vollert, chief of Nothnagel's clinic, also agrees with Jumon that an early operation is seldom called for.

On the other hand, if the exudation tends to become chronic, and if there is suppuration with fever, a surgical operation is demanded. An early operation, moreover, is not contraindicated if there is certainty of the existence of an abscess; also, if there exists an acute peritonitis by perforation, even before the formation of adhesions, as here a laparotomy would be the last chance of life for the patient.

To these indications, J. Israël adds another: A laparotomy is indicated in recent cases of perityphlitis when there are grave symptoms, such as: frequency of the pulse with normal or sub-normal temperature, pallor or cyanosis, vomitings, in short, when there is aggravation of the general and local state, although there may be no adhesions, and the presence of an abscess may not be demonstrated.

The most favorable cases for operation, according to Jumon, are those in which the exudation is circumscribed, encapsulated. But it will not do to forget that purulent collections of considerable size have disappeared under the influence of medical treatment alone. If there exists already a general peritonitis, the prognosis will be always unfavorable whether an operation be performed or not.

In cases of perforation of the appendix, there should be complete resection of the latter if there are no obstacles in the way, due to adhesions to the cæcum, mesentery, or neighboring intestinal coils. It is certain that many cases get well promptly after resection of the appendix, and that the danger of relapses is prevented by the operation. This fact has led many surgeons in this country to prefer an early laparotomy which, if successful, is followed by removal of the cause and prompt recovery, with no possibility of a return, to the doubt, anxiety and risk attending a purely medical treatment. But this subject was so fully discussed in all its bearings at the last meeting of the Massachusetts Medical Society[1] that we need only advise a careful reading of the report of that meeting. Twenty or thirty years ago the frequency of appendicitis with subsequent fatal peritonitis, was pointed out by Dr. J. B. S. Jackson. Operative interference was not then thought of, and treatment halted between first, leeching and mercury: second, opium.

[1] See Journal, vol. cxxv, p. 36.

MEDICAL NOTES.

The Virchow Medal. — It is said that the medal presented to Professor Virchow, at his recent jubilee, measures 118 millimetres in diameter, and is made from eighteen-carat gold. The front of the medal bears a bust representation of Virchow in relief. The back is adorned with an heraldic design, the allegorical figures of medicine and pathology; microscopes, books, skulls, and an Egyptian mummy.

Medical Cases at an Exhibition. — The medical committee of the World's Fair may know what to expect from the experience of the last Paris Exhibition, where, according to *Figaro*, 732 female visitors had attacks of hysterics, whilst only 197 fainted. There were no less than 11 deaths in the Exhibition, and, strange to say, three births. Only 243 thefts were reported; but the police restored no less than 305 lost children to their friends.

New Jersey Medical Examiners. — The first annual report of the New Jersey State Board of Medical Examiners shows that the Board organized on September 2, 1890, and subsequently the first examination was made. Ten of eleven candidates passed successfully. Afterward the repeal of the charter of the Medical and Surgical Eclectic College, in Jersey City, was received. In January, 1891, the Board licensed six candidates, and in April last, 25 out of 32 applicants passed. In July, seven out of 15 candidates passed. Up to date 101 candidates have been examined, and 82 were licensed to practise in New Jersey and three in preliminary branches.

A Prize for an Essay on Central Africa. — The King of the Belgians has offered a prize of twenty-five thousand francs for an essay, embodying the following subjects: The meteorological, hydrological and geological conditions of the districts of equatorial Africa from a sanitary point of view. The principles of hygiene necessary in these districts, with facts showing the best mode of living, forms of diet, and occupation, and the most expedient methods of clothing. The symptomatology, etiology, and pathology of the diseases common to these districts and the principles both of prophylactic and therapeutic treatment thereof, and suggestions to be followed in the choice and dose of drugs as well as in the establishment of hospitals and sanatoria. The competitors for this prize are reminded that in their scientific researches, as in their practical conclusions, they will have to make them apply to Europeans in the various localities of the Congo basin. The competition is open to all. The works of those competing must be transmitted to the Minister of the Interior and Public Instruction at Brussels, before the 1st of January, 1897.

Virchow's Observations on Old Athenian Skulls. — At a recent sitting of the Royal Academy of Science in Berlin, says the *Lancet*, Professor Virchow made interesting communications regarding his measurements of old Athenian skulls dug out by the late Dr. Schliemann, from his own grounds in Athens. He found eleven graves there, ten of which, judging by their contents, were of the fourth, and one of the sixth century before Christ. All the graves contained human bones, but only four skulls could be taken out in a tolerably unimpaired condition, and these Virchow has measured. All four must have belonged to adults, probably of advanced age. The most remarkable thing about them is the smallness of their capacity. Virchow made a similar observation in 1871 on two skulls dug out in Piræus Street in Athens. One, which belonged to an old woman named Glykera, was of the Macedonian time; in the other grave, that of a powerful man, numerous clay vessels of the most ancient style were found. On that occasion also, Virchow remarked that the small capacity of those skulls was surprising, being so much below the average of other civilized peoples that one was inclined to suppose them to have belonged to members of a savage race. This singular fact should make one pause before accepting capacity of skull as a measure of the civilization of a race, as some anthropologists have done.

NEW ENGLAND.

The Annual Report of the Massachusetts State Board of Health, for the year 1890 has recently appeared. The State was unusually free from severe outbreaks of contagious disease. The only noteworthy epidemic was that of influenza, which began in December, 1889, and ended in February, 1890. The total number of cases of small-pox which were reported to the Board during the year was six, and only one was fatal. Several cases of typhoid fever occurred in Newton in the fall, in a limited locality. The Board renews it recommendations, that the present law allowing a town to impose the duties of the local Board of Health upon the selectmen should be made permissive only in the smaller towns. It is also recommended that the weekly returns of mortality which are now sent to the State Board by the local Boards of Health be required by legal enactment, as applied to all cities and large towns. It recommends the continuance of experiments upon intermittent filtration of surface waters and of sewage; the continuance of the work already commenced upon wells used by the public; and the investigation of some of the spring waters that are sold in many of the cities. For these purposes, and to make the necessary investigations in order to advise towns, cities, corporations and individuals in regard to the best method of assuring the purity of intended or existing water-supplies, and the best method of disposing of sewage, and to carry out the other provisions of the statute, the Board estimates that the sum of $27,000 will be required.

NEW YORK.

Hospital Saturday and Sunday Association. — On October 19th the first meeting this season of the Hospital Saturday and Sunday Association was held, and the preliminary arrangements made for the annual collection in December.

St. Luke's Hospital. — The annual meeting of the Society of St. Luke's Hospital was held on October 19th, when the usual reports were read. The chief business coming before the session was the subject of the proposed removal of the hospital from its present site at Fifth Avenue and 55th Street, and the matter was referred to a special committee for consideration. The demands upon the resources of the institution have become so great that more ample accommodations are required.

Miscellany.

VIRCHOW'S SEVENTIETH BIRTHDAY.

Virchow's seventieth birthday, on October 13th, was celebrated with much pomp and circumstance. According to the *British Medical Journal*, so many congratulatory deputations had been announced that the professor's house did not afford room for all, and the large banqueting hall of the Kaiserhof was therefore chosen for their reception. The first deputation to offer their congratulations was one from the Ministry of Public Instruction, headed by Dr. Bartsch, one of the chief officials of the Ministry. The next deputation consisted of the professors of the medical faculty, headed by the Dean, Professor August Hirsch. This deputation was followed by one from the Academy of Science, headed by Professor von Helmholtz. The deputation bearing an address from the Municipality of Berlin, presenting Professor Virchow with the freedom of the city, was headed by Dr. von Forckenbeck, the burgomaster, who referred in grateful terms to what Virchow had done to improve the health of the city. The address and the accompanying medal, sent by the scientific bodies of Great Britain, were presented by Dr. Semon and Mr. Horsley. Congratulatory addresses were also presented by the medical faculties of Amsterdam, Pavia, Kazan, Warsaw, Brussels, Stockholm, Moscow, St. Petersburg, Berne, Tokio, Upsala, Tomsk, and other places. The military surgeons, represented by Surgeon-General von Coler, and the naval surgeons, represented by Dr. Wenzel, also tendered their congratulations. After an interval of rest, Professor Waldeyer presented the gold medal, which has been subscribed for by Virchow's admirers, in and out of Germany. A silver replica was presented to his wife, and bronze copies to each member of the family and to the scientific bodies which had contributed towards it.

After the ceremony in the Kaiserhof Hotel, a second meeting was held in the large hall of the Pathological Institute. Here an almost endless procession of learned bodies and other corporations, presenting gifts and addresses, defiled before Professor Virchow. The Berlin Medical Society, of which Professor Virchow is president, presented him with his portrait, painted by Professor Lenbach, the presentation being made by Professor von Bergmann. Next came deputations from the Berlin Society of Anthropology and Ethnology, the students of the University, the physicians, the public hospitals, the medical journals, and various other bodies. Dr. Adolph Meyer presented a plant recently discovered by Baron Muller, of Melbourne, in the heights of the tropical mountains of Australia, which the discoverer had named the "Virchow plant."

The proceedings, which had been commenced at 10 A. M., came to an end at 4.30 P. M. In the evening a *commers*, or reunion, of the friends of Professor Virchow, was held in Kroll's Theatre, at which speeches were delivered by Herr Eugen Richter, leader of the Radical party, and others.

COMPULSORY MEDICAL EXAMINATIONS.

The last volume of United States reports contains an opinion of the United States Supreme Court on the question of the right of a court to compel a plaintiff in a suit for damages to submit to a personal examination, in order that his physical condition may be determined.

The question arose in an action brought by a woman against the Union Pacific Railway Company for injuries to her head and spine, caused by the falling of a berth in a sleeping car in which she was travelling. A few days before the trial the counsel for the company moved the Court for an order requiring her to submit to a medical examination in the presence of her own physician and attorneys, if she desired their presence. The Court refused to grant the order, on the ground that it had no legal right to do so. An appeal was taken by the company to the United States Supreme Court. This tribunal sustains the ruling of the lower court. In the opinion of the Supreme Court Justice Gray says:

"No right is held more sacred or is more carefully guarded by the common law than the right of every individual to the possession and control of his own person, free from all restraint or interference of others, unless by clear and unquestionable authority of law. As well said by Judge Cooley: 'The right to one's person may be said to be a right of complete immunity — to be let alone.'

"The inviolability of the person is as much invaded by a compulsory stripping and exposure as by a blow. To compel any one, and especially a woman, to lay bare the body or to submit it to the touch of a stranger without lawful authority is an indignity, an assault and a trespass, and no order or process commanding such an exposure or submission was ever known to the common law in the administration of justice between individuals, except in a very small number of cases based upon special reasons and upon ancient practice."

Within a few years past the courts in several of the Western and Southern States, following the lead of the Supreme Court of Iowa in a case decided in 1877, have granted orders for the medical examination of persons. Referring to these cases, Justice Gray says: "Upon mature advisement we retain our original opinion that such an order has no warrant of law."

THERAPEUTIC NOTES.

A Prolonged Condition of Acute Cocaine Poisoning. — Hallopeau[1] describes a condition following acute cocaine intoxication, in which the usual symptoms persist, sometimes for weeks. Several cases are mentioned, and the following conclusions drawn: A single injection of hydrochlorate of cocaine may give rise, not only to accidents, severe and alarming at the time, but also to serious prolonged disturbances. These disturbances are similar to those observed in acute poisoning, especially characteristic symptoms being a persistant headache, with malaise,

[1] Bul. Gén. de Thérap., June 15th.

insomnia, numbness of the extremities, vertigo and prostration combined with cerebral excitement, shown by talkativeness and agitation. This result may be produced by small doses of the drug, and may last several months. It is especially liable to occur in patients of a nervous and excitable disposition, and in intellectual and educated persons.

CHLOROFORM IN THE TREATMENT OF TUBERCULOSIS. — At the Congress of Tuberculosis recently held in Paris, M. Desprez,[1] spoke strongly in favor of chloroform as a remedy possessing "truly marvellous antibacillary properties." He has given from one to two grammes of chloroform (by the mouth) daily to a patient for two months without any bad effect; on the contrary, remarkable improvement took place under the treatment. M. Desprez says that washing out tuberculous abscesses with chloroform water yields very satisfactory results.

Correspondence.

PLAIN TALKS ON MEDICAL ELECTRICITY AND BATTERIES.

WAYNE, DELAWARE CO., PA., October 19, 1891.

MR. EDITOR: — I have only just now seen your critic's review of "Plain Talks on Medical Electricity and Batteries" (Vol. CXXV, p. 41). Of his estimate of the value or merit of my little book it does not become me to speak.

His remarks upon the current of the coarse wire coil and of the fine wire coil of the Faradic battery are, I think, incorrect.

I wrote, on page 60: "I, some time ago, made the assertion that I quite agreed with Tripin, Apostoli and others in regarding the current of the 'primary' or thick wire as differing in its effects from that produced by the 'secondary' or fine wire." These facts of clinical difference are accepted by almost every competent authority in this country and in France, and can be demonstrated by tapping a long wire — say from one-half to one mile in length — at various distances, and then testing it. The feel of the current is quite different as different lengths are tapped, and is entirely different from the current generated by the coarse wire. Dr. Goelet's thoughtful paper, read at the first meeting of the American Electro-Therapeutic Association, is devoted to this question, and will bear reading. Your critic is right in his estimate of my knowledge of physics. I am a student, and shall possibly remain so until I put by my books forever. But, though he himself may be distinguished as a physicist, he will pardon me for questioning his acumen as an electrical therapeutist. I may also be wrong in my belief that a profound knowledge of physics is not necessary to a recognition of the differences in the feel of currents. I do it with diffidence, but will your critic allow me to offer the least suggestion possible. Will he test this himself, and also will he adopt the method of Mons. d'Arsonval, and obtain for himself tracings of the "characteristic" curve, together with the muscular reaction. These can be traced on the same revolving cylinder, the one above the other. I hope that he will then be brought into the fold, for he certainly has few companions in his present homestead. Yours truly,

HORATIO R. BIGELOW, M.D.

[We regret that the author of the above letter should have misunderstood our position, by overlooking the word "qualitative" in the review of his book. We will admit freely that a short coil of coarse wire will give a current differing in strength from a long coil of fine wire, owing to the difference in resistance in the coils. To regard the difference as a difference of quality, or to argue that the size of the wire is an essential factor, is another matter. A Grenet cell will give a current of a different strength from that of a Leclanché, but not of a different quality, and the sole distinction that can be made in practice must be as to the number of cells employed to obtain a given electromotive force. The author will find the reviewer's point sustained by von Ziemssen, Edelmann, and in the excellent little work of Wellington Adams, who may safely be regarded as "competent authorities." — ED.]

[1] Sem. Méd., August 5th.

METEOROLOGICAL RECORD,

For the week ending October 11, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
M.. 5	29.69	62	68	57	98	76	87	N.	W.	11	16	R.	F.	.12
T.. 6	30.13	56	62	49	57	50	54	N.W.	N.W.	16	6	C.	O.	
W.. 7	30.19	54	57	50	61	97	79	N.E.	N.E.	13	18	O.	R.	.08
T.. 8	29.75	58	65	51	100	74	87	N.W.	N.W.	9	12	R.	C.	2.00
F.. 9	30.06	50	55	45	73	69	71	N.	S.E.	8	7	O.	C.	
S..10	30.10	51	58	44	70	73	72	W.	S.E.	2	2	F.	C.	
S...11	30.26	51	58	43	72	71	72	N.W.	N.	10	20	O.	O.	.01
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 10, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	722	325	22.82	10.64	12.04	2.52	3.22
Chicago	1,099,850	443	187	32.66	8.05	11.96	10.12	6.44
Philadelphia	1,046,964	—	—	—	—	—	—	—
Brooklyn	806,343	396	219	19.20	10.56	11.04	3.08	3.36
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	170	82	17.11	15 34	13.57	—	2.36
Baltimore	434,439	—	—	—	—	—	—	—
Cincinnati	296,908	100	28	15.00	13.00	4.00	2.00	6.00
Cleveland	262,000	99	33	22.22	5.05	8.08	6.06	8.08
New Orleans	242,039	—	—	—	—	—	—	—
Pittsburg	240,000	88	40	43.32	7.98	11.40	5.70	15.96
Milwaukee	240,000	—	—	—	—	—	—	—
Washington	230,392	103	32	22.31	14.55	8.73	3.88	5.82
Nashville	76,168	25	5	24 00	12.00	16.00	4.00	—
Charleston	65,165	41	17	14.64	9.76	12.20	2.44	—
Portland	36,425	16	6	12.50	18.75	12.50	—	—
Worcester	84,655	32	13	21.91	6.26	12.54	—	3.13
Lowell	77,696	39	17	25.60	18.92	15.36	7.68	—
Fall River	74,398	44	23	31.78	11.35	22.70	4.54	—
Cambridge	70,028	18	6	5.55	16.66	—	—	—
Lynn	55,727	22	10	18.22	4.55	13.65	—	4.55
Lawrence	44,654	19	9	15.78	5.26	5.26	5.26	5.26
Springfield	44,179	17	8	17.64	11.76	5.88	—	11.76
New Bedford	40,733	20	10	30.00	10.00	20.00	—	5.00
Salem	30,801	16	—	18.75	—	18.75	—	—
Chelsea	27,909	16	8	—	32.25	—	—	—
Haverhill	27,412	10	3	10.00	—	—	—	10.00
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	7	2	28.56	—	—	—	14.28
Gloucester	24,651	7	3	14.28	—	14.28	—	—
Newton	24,379	7	4	—	14.28	—	—	—
Malden	23,031	12	4	—	—	—	—	—
Fitchburg	22,037	15	5	13.33	26.66	13.33	—	—
Waltham	18,707	11	5	27.27	9.09	27.27	—	—
Pittsfield	17,281	3	2	33.33	33.33	33.33	—	—
Quincy	16,723	3	1	—	—	—	—	—
Newburyport	13,947	9	4	11.11	22.22	11.11	—	—
Medford	11,079	1	0	—	—	—	—	—
Hyde Park	10,193	4	2	25.00	25.00	—	—	—
Peabody	10,158	—	—	—	—	—	—	—

Deaths reported 2,535: under five years of age 1,116; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhœal diseases, whooping-cough, erysipelas and fevers) —, consumption 269, acute lung diseases 183, diarrhœal diseases 28, diphtheria and croup 110, typhoid fever 94, scarlet fever 31, cerebro-spinal meningitis 19, whooping-cough 19, malarial fever 10, measles 8, erysipelas 7, puerperal fever 2.

From scarlet fever New York 11, Chicago 9, Pittsburgh 5, Brooklyn 4, Cincinnati 2. From cerebro-spinal meningitis New York 5, Chicago, Brooklyn and Washington 3 each, Boston, Worcester, Fall River, Lynn and Taunton 1 each. From whooping-cough New York 7, Chicago and Pittsburgh 3 each, Brooklyn, Washington, Lowell, Cambridge and New Bedford, 1 each. From measles New York 4, Brooklyn 2, Cincinnati and Fall River 1 each. From malarial fever New York 6, Brooklyn 3, Nashville 1. From erysipelas New York and Chicago 3 each, Pittsburgh 1.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending October 3d, the death-rate was 18.4. Deaths reported 3,315: acute diseases of the respiratory organs (London) 171, diarrhœa 308, whooping-cough 53, fever 45, diphtheria 39, scarlet fever 31, measles 26.

The death-rates ranged from 12.4 in Portsmouth to 32.4 in Preston, Birmingham 19.4, Bolton 17 6, Hull 24.9, Leeds 16.0, Leicester 19.0, Liverpool 27.0, London 15.7, Manchester 22.8, Newcastle-on-Tyne 25.3, Nottingham 16.7, Sheffield 21.8, Sunderland 23 4.

In Edinburgh 16.7, Glasgow 17.4, Dublin 26.6.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 17, 1891, TO OCTOBER 23, 1891.

MAJOR RICHARD S. VICKERY, surgeon, U. S. A., is relieved from duty at the Army and Navy General Hospital, Hot Springs, Ark., and ordered to duty at Fort Monroe, Va.

MAJOR CURTIS E. MUNN, surgeon, U. S. A., upon being relieved from duty at Fort Monroe, Va., is ordered to duty at Mount Vernon Barracks, Ala.

MAJOR PETER J. A. CLEARY, surgeon, U. S. A., upon being relieved from duty at Mount Vernon Barracks, Ala., is ordered to duty at Fort McPherson, Ga.

MAJOR JOHN C. G. HAPPERSETT, surgeon, U. S. A., upon being relieved from duty at Fort McPherson, Ga., is ordered for duty at Fort Custer, Mont.

CAPTAIN EDWIN F. GARDNER, assistant surgeon, U. S. A., will proceed from Fort Porter, N. Y., to New York City, N. Y., for temporary duty as attending surgeon and examiner of recruits in that city.

MAJOR WILLIAM E. WATERS, surgeon, U. S. A., upon being relieved from duty at Fort Custer, Mont., is ordered for duty at Columbus Barracks, O.

FIRST LIEUTENANT NATHAN S. JARVIS, assistant surgeon, is relieved from duty at Fort Bayard, N. Mex., and ordered for duty at San Carlos, Ariz.

CAPTAIN RICHARD W. JOHNSON, assistant surgeon, upon being relieved from duty at San Carlos, Ariz., is ordered for duty at Fort Bayard, N. Mex.

FIRST LIEUTENANT BENJAMIN BROOKE, assistant surgeon, is relieved from duty at Fort Riley, Kan., and ordered for duty at Fort Leavenworth, Kan.

FIRST LIEUTENANT FRANK R. KEEFER, assistant surgeon, upon being relieved from duty at Fort Leavenworth, Kan., is ordered for duty at Fort Riley, Kan.

By direction of the President, MAJOR PASSMORE MIDDLETON, surgeon, U. S. A., will report in person to COLONEL MELVILLE A. COCHRAN, Sixth Infantry, President of the Army Retiring Board at Newport Barracks, Ky., for examination by the Board.

Leave of absence for one month is granted CAPTAIN DANIEL M. APPEL, assistant surgeon, U. S. A., to take effect about 6th proximo.

CAPTAIN CHARLES M. GANDY, assistant surgeon, U. S. A., granted leave of absence for fifteen days, to take effect on final adjournment of Army Medical Board, now in session in New York City, N. Y.

By direction of the President, CAPTAIN ARTHUR W. TAYLOR, assistant surgeon, U. S. A., will report in person to COLONEL JOHN MENDENHALL, Second Artillery, President of the Army Retiring Board at Fort Adams, R. I., for examination by the Board.

SOCIETY NOTICES.

SUFFOLK DISTRICT MEDICAL SOCIETY. — There will be a stated meeting at 19 Boylston Place, on Saturday, October 31, 1891, at 8 P. M.

Papers: Dr. E. M. Buckingham, "Some Uses of the Stomach Tube." Dr. W. M. Conant, "Alexander-Adams Operation." The paper will be discussed by Drs. Elliot, Harrington and Johnson.

Incidental business: Choice of a committee of five to prepare a list of candidates for officers of the Society.

Supper after the meeting. JAMES J. MINOT, *Secretary.*

NORFOLK DISTRICT MEDICAL SOCIETY. — The Censors have adjourned till November 3d, 7 P. M. The examination of candidates will take place November 3d, at the office of Dr. J. C. D. Pigeon, 130 Warren Street, Roxbury. The written examination will begin at 7 P. M., the oral at 8 P. M.

Candidates are requested to be prompt, and to bring their medical diplomas, and fee of five dollars.

J. C. D. PIGEON, M.D., *Secretary.*

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting will be held at 19 Boylston Place, on November 2, 1891, at 8 o'clock.

Drs. H. F. Vickery and G. L. Walton will read a joint paper entitled, "A Contribution to the Study of Chorea, with Especial Reference to its Connection with Heart Disease and Rheumatism." Discussion by Drs. S. G Webber, C. F. Folsom, F. C. Shattuck, Morton Prince, P. C. Knapp, W. N. Bullard and others. JOHN C. MUNRO, M.D., *Secretary.*

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY. — There will be a meeting of this Section at 19 Boylston Place, on Wednesday evening, November 4th, at 8 o'clock.

Dr. W. M. Conant will present a Case showing Satisfactory Results of Tendon and Nerve Suture after Injury. Dr. J. C. Munro will show a Case of Gastrostomy for Malignant Disease of the Œsophagus. Dr. S. J. Mixter will report Two Cases of Appendicitis, the one complicated by uterine fibroid, and the other occurring during pregnancy. Drs. W. H. Prescott and Joel E. Goldthwait will report results obtained in 531 Cases of Intubation and Tracheotomy.

GEORGE H. MONKS, M.D., *Secretary.*

RECENT DEATHS.

EDWARD RUSSELL, M.D., died in Wollaston, Mass., October 22d, aged fifty. He graduated from the Harvard Medical School in 1862, and immediately enlisted as assistant surgeon, and served in the Twenty-sixth Massachusetts Infantry and Fourth Massachusetts Cavalry until the close of the war. He had not practised medicine for several years.

E. A. OSBORNE, M.D., of Newark, N. J., died October 24th, aged sixty-eight.

M. C. WEST, M.D., of Rome, N. Y., died October 20th, aged fifty-seven.

DR. JACOB POLAK died in Vienna, early in October, aged seventy-one. He was for some time court physician to the Shah of Persia, and the author of several medical works written in Persian, and of a standard work on the flora, geology and archæology of Persia.

DR. CARL WEDL, Professor of Histology in the University of Vienna, died September 23d, aged seventy-six. He had been Professor since 1872, and was Rector of the University in 1883. He has contributed largely to medical literature.

THE UNITED STATES MEDICAL PRACTITIONERS' PROTECTIVE ALLIANCE.

The transactions of the first annual meeting of the United States Medical Practitioners' Protective Alliance have been published and are now ready for distribution to the profession. The volume contains the addresses in full delivered at the Baltimore meeting, together with the Constitution and By-Laws and other information. A copy will be mailed to any physician interested who will send stamp to the Secretary, Dr. J. F. Davison, Glendola, N. J.

BOOKS AND PAMPHLETS RECEIVED.

Tumors of the Naso-Pharynx, Pharynx, Larynx and Œsophagus By W. Cheatham, M.D., Louisville, Ky. New York: D. Appleton & Co. Reprint. 1891.

Weight of the Brain in the Feeble-Minded. By A. W. Wilmarth, M.D., Assistant Superintendent Pennsylvania Institute for Feeble-Minded Children. Reprint. 1891.

Essentials of Bacteriology, being a Concise and Systematic Introduction to the Study of Micro-Organisms By M. V. Ball, M.D. Saunder's Question Compends No. 20. Philadelphia: W. B. Saunders. 1891.

Hand-book of Materia Medica, Pharmacy and Therapeutics. By Samuel O. L. Potter, A.M., M.D., M.R.C.P., Professor of the Theory and Practice of Medicine in the Cooper Medical College of San Francisco. Third edition. Philadelphia: P. Blakiston, Son & Co. 1891.

Original Articles.

RELATIONS BETWEEN ARTERIAL DISEASE AND VISCERAL CHANGES.[1]

BY GEORGE L. PEABODY, M.D., OF NEW YORK.

(Concluded from No. 18, page 462.)

Of ninety cases of arterio-sclerosis examined by Raelhmann, forty-four showed lesions in the fundus of the eye. The same writer elsewhere [21] records a case of sudden total blindness in a puerperal woman after severe bleeding whose death occurred eight weeks later from a second uterine hæmorrhage. Autopsy showed the cause of the blindness to be a condition of arterio-sclerosis with local narrowing of lumen in many places and consecutive retinal œdema.

Much of Raelhmann's work is confirmed by Goldzieher [22] in a recent paper.

These observations have more recently been confirmed and added to by a French writer.[23] He has seen hæmorrhages in retina, in choroid, in optic nerve and its enveloping membranes, as well as miliary aneurisms — besides the arterial changes just mentioned. These are regarded as important diagnostic signs of the initial stage of arterio-sclerosis. Inasmuch as liability to aneurism and laceration of arteries is greatest at this time, it would seem logical to warn patients who manifested these symptoms from exposing themselves to exciting causes which are known temporarily to increase arterial tension. It is calculated that the critical period is about the fortieth year as we have seen, and that if, with these early signs of arterial change, men will lead circumspect lives for a few years at this time they may escape the danger of arterio-sclerotic aneurism until the liability is passed, or until the compensatory sclerosis has taken place.

There seems to be experimental proof of much of this. In dogs arterio-sclerosis rarely occurs spontaneously. If the aortic valve is lacerated, the sphygmograph at once shows in the femoral artery all the usual indications of aortic insufficiency. In the next few days no changes are observable in the arterial system. A few days later tortuosity and pulsation of the retinal arteries become visible, and at this time examination of pieces of arterial trunks removed from the body shows that they have become defective in point of elasticity and that they can be dilated more easily than normal arteries. After the lapse of two or three years, the tortuosity of the retinal arteries persists and a diffuse arterio-sclerosis can be distinctly made out by microscopic examination.

The use of the sphygmograph and the importance of an accentuated second aortic sound in diagnosticating the increased arterial tension which is often characteristic of the early stages of these changes are both well recognized.

The relation of the sclerotic process to the formation of aneurism is thus conservative, although the antecedent stage of weakness of the media would seem to be a predisposing cause of that grave disease.

We have seen that arterio-sclerosis is a common cause of left ventricular hypertrophy; and yet it is a common experience for every pathological anatomist to find a small atrophic, pigmented heart when this arterial lesion is combined with aneurism.

This has recently been explained by Högerstedt [24] after the narration of such a case. The way in which arterio-sclerosis causes hypertrophy is by overtaxing the muscular force of the heart by increasing the resistance to be overcome: this occurs in consequence of a diminution of the elasticity of the arterial system. If now an aneurism exist early in the process (and it is not likely to occur late) this lack of elasticity is in part thus compensated and the aneurism aids somewhat in the propulsion of the blood through the diseased arteries. The inference is that the aneurism acts to replace the partially lost elasticity of the arteries, much in the same way that the rubber bulb contributes by its elasticity to the generation of a continuous current in the ordinary hand-atomizer.

If the vascular lesion be once well pronounced it becomes capable of causing grave secondary changes in the region supplied by the affected vessels, as has been already stated.

The combination of a syphilitic endarteritis with a periarteritis has often been the direct cause of cerebral softening; and in other cases has caused a thrombus to form at its site with the same result so far as the nutrition of the brain is concerned. Cases of this kind have repeatedly come under my observation and been followed to the post-mortem table.

Softening of the brain from diffused arterio-sclerosis has often occurred without the causative influence of syphilis. Such a cause was reported by Ball and Seguin [25] several years ago.

It has occurred very early in life as a lesion of syphilis. In a syphilitic child of twenty months it proved fatal after characteristic disturbances of cerebral function. No autopsy was permitted in this case which is published by Seibert,[26] but the diagnosis seems to have been carefully made.

Leudet [27] records an interesting case of recovery from what he considers to have been syphilitic arteritis. His patient was a man, fifty-three years old. He had the usual "head symptoms," with which we are all familiar, syphilitic infection having occurred four years previously. But in addition to these symptoms he manifested others of unusual occurrence, that is, he suffered from lancinating pains in the scalp in the neighborhood of branches of the temporal arteries. These vessels gradually became stiff, hard and swollen. All symptoms gradually disappeared after four months of specific treatment.

Here the lesion occurred in superificial arteries coincidently with its occurrence in those of the brain; and its cure was brought about in both sets of vessels by ordinary specific treatment.

It seems occasionally to cause death in early life by cerebral hæmorrhage. It is probable that aneurism-formation is the immediate cause of the rupture of arteries, in young subjects as in old, when it occurs early in arterio-sclerosis.

Some years ago a boy, nineteen years of age, died of cerebral hæmorrhage in the New York Hospital in whose arteries this lesion was very distinct. (Fig. 1.) I have the pleasure of showing you a few sections of one of his internal carotid arteries in which the sclero-

[1] Read at the meeting of the Association of American Physicians, Washington, September, 1891.

[21] Fortschritte d. Med., vii, p. 928, 1889.

[22] Centbitt für pract. augenh., Leipzig, 1889, xiii, p. 361.

[23] Kœnig: De l'arterio-sclérose et des affections oculaires que en dependent. Thèse, Paris, 1890.

[24] Petersburger Med. Wochenschrift, xiv, 18-19, 1889.

[25] Archives of Medicine, N. Y., vol. v, 1881, p. 136.

[26] New York Jahrb. d. Kinderheilk., xxii, 4, p. 333, 1885, quoted in Schmidt's Jahrb., vol. 207, p. 266.

[27] L'union, 146, 1884, quoted in Schmidt's Jahrb., vol. 207, p. 265.

tic process is well seen. W. J. F., was a canvasser by occupation. He was said to have been in good health prior to this illness. Unfortunately his history is meagre. He was known to be well at 1.30 A. M. on December 4, 1884. Two hours later he was found comatose and was brought immediately into the hospital. Fifty minutes after he was found in this condition he died, having remained absolutely comatose all the time.

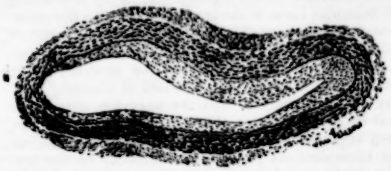


Fig. 1. Internal carotid artery of boy nineteen years of age, who died of cerebral hæmorrhage. It shows lesion of arterio-sclerosis. Numerous other arteries showed same lesion.

The autopsy which I made several hours later, showed very extensive cerebral hæmorrhage with great laceration of brain; and besides this it showed arterio-sclerosis very generally throughout the body. I have records of the presence of this lesion in both internal carotids, one common carotid, both renal arteries and the small arteries in the substance of both kidneys. The aorta was very small, measuring in diameter at the beginning of the transverse portion of the arch 16 cm.; at its bifurcation, 1 cm.

There was distinct hypertrophy of the left ventricle, and the kidneys were atrophied and showed by microscopic examination the lesions of chronic diffuse nephritis.

Virchow[29] has called attention to the fact that in cases of congenitally small aorta, like this one, there seems to be a tendency towards the development of degenerative changes in the intima, such as sclerosis and atheroma; and occasionally also fatty changes in the media and myocardium. He also speaks of hypertrophy of the left ventricle as occurring in this condition.

I regret that at that time I was not specially interested in this subject, hence my investigation of this case, both clinically and anatomically, must appear to you very unsatisfactory.

It would be easy to adduce many cases of death from this disease in the cerebral vessels, occurring in middle life; but it would, perhaps, not be profitable to do so. It is sufficient to say that it is common; that it is often of syphilitic origin; that it is then usually accompanied by definite symptoms, of which pain is a marked one; that it is likely to be associated with periarteritis; that it disturbs brain function by depriving specific areas of their blood-supply; that it may do this with or without an accompanying process of thrombosis; that it is, when due to syphilis, very amenable to treatment, if the treatment be sufficiently early and sufficiently energetic; that if it be not properly treated it is likely to lead to death by cerebral softening. (Fig. 2.)

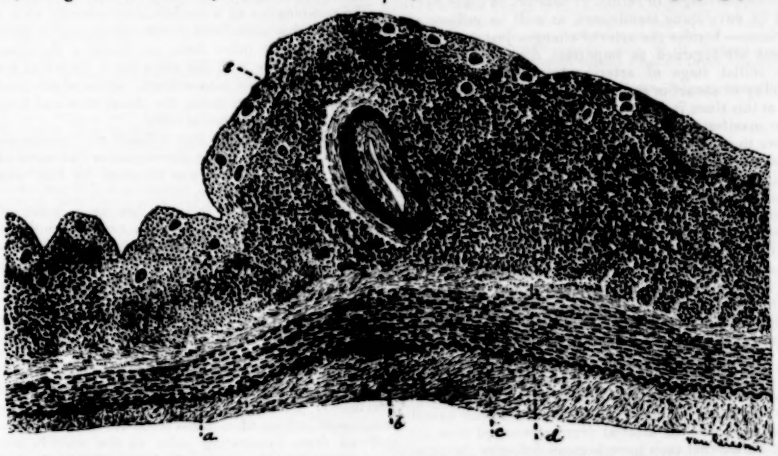


Fig. 2. Longitudinal section of left vertebral artery, showing arterio-sclerosis, with syphilitic periarteritis. The other arteries at base of brain showed similar lesion, and there was thrombosis of the basilar, which caused death. Patient was forty years of age, and had suffered from intermittent severe headache for a year. He died untreated.

a. Thickened intima. *b*. Lamina elastica. *c*. Media. *d*. Adventitia. *e*. Small artery of adventitia showing same lesion.

All of this is commonplace. Less so is the question as to whether death can be caused by this lesion, preceded by symptoms of disturbance of brain-function, such as hemiplegia, aphasia, etc., *without lesion* of the brain. I believe that it can, that it has occurred in my own practice. The following case[30] published elsewhere some years ago, seems to illustrate this possibility:

J. M., aged fifty-six, a native of Ireland, widower, a tailor by occupation, was admitted to my service in the New York Hospital, April 22, 1886. He gave

[29] Uber Chlorose u. die Damit Zusammenhängenden Anomalien im Gefässapparate, u. s. w. Berlin: A. Hirschwald, 1872; also Schmidt's Jahrb, 1872, bd. 156, p. 339.

[30] New York Medical Record, 1886, p. 65.

the following history: his mother was rheumatic; of his father he knew but little. He said that he (the patient) had had rheumatism in his hips for six years. He denied malarial history. He had a soft chancre years ago, and suppurating bubo, but he denied symptoms of syphilis. He had partaken immoderately of spirits for the past twelve years. During the entire past winter he had suffered from a continuous headache, and from ringing in the ears. He had not been dizzy. About ten days ago he suddenly fell to the floor, and was unable to move either of his right extremities, and was unable to talk. He did not lose consciousness. In half an hour he was able to talk, and power had returned in great measure to his leg, but less completely to his arm. Recovery, however, was ultimately complete. Four or five times since then he has had slighter attacks of a similar character, when he could not speak or move, but recovered always in a few minutes. There was never any loss of consciousness. He never had an attack before ten days ago. His appetite was fair, his bowels regular, his temperature 100.6°, respiration 24, and pulse 82. On his admission to the hospital at 11 A. M., he was senile; his superficial arteries were stiffened and tortuous. He was poorly nourished; there was no œdema. There was incomplete right facial paralysis. The tongue, on being protruded, deviated to the right. There was well-marked right hemiparesis; there was no disturbance of sensation.

There was lateral curvature of the spine; the chest was barrel-shaped; the heart-sounds were normal.

His urine gave the following results on examination: Reddish-yellow, acid, 1,024, no albumen, negative microscopically.

Treatment. — Iodide of potassium, twenty grains every three hours.

April 23d, at 3 A. M., he had a seizure, characterized by loud, gasping, stertorous breathing, and complete inability to speak or protrude his tongue. His pupils were normal. He could move both arms and legs, but there was marked diminution in the power of both of his right extremities. Consciousness was complete. In about half an hour he recovered from this attack, was able to speak perfectly, and told accurately all that had happened. He could protrude his tongue readily. It deviated somewhat to the right. His temperature and pulse were normal; his respiration somewhat accelerated. The iodide of potassium was increased to thirty grains at a dose. He felt well, and was allowed solid food at his own request. In the absence of the attendant he tried to get into bed from the night stool this morning, but fell and was unable to get up without assistance. At 5.30 P. M., he had an attack similar to the previous one. It lasted forty minutes. Recovery from it was slower and less complete. He could soon protrude his tongue, but with difficulty. He could talk so as to be understood, but talking was difficult, and his speech was indistinct.

April 24th. During the early part of the night he again got out of bed and fell, and was quite restless. He said that after both attacks his head ached very severely, and he was unable to eat. Very early this morning he had a similar attack, but much more severe than any of the previous ones. At 4.30 A. M., he was still suffering from it, was conscious, but now was entirely unable to move the right side. At 9 A. M., he was unconscious, in a profuse perspiration, and breathing with marked stertor. His temperature was 104° F., respirations 52, pulse 129. He continued in this state, rapidly growing weaker, till 1.45 P. M., when he died. The temperature after death was 105.8° F.

The autopsy was made about an hour after death. The weather was warm, and therefore, to prevent the occurrence of post-mortem changes, the body was taken directly from the ward to the autopsy-room. It was fairly nourished. Rigor mortis was absent. There was no œdema. The organs generally were normal. The cortices of the kidneys was a trifle thin, but the surfaces were smooth, and the markings distinct. There was slight hypertrophy of the left cardiac ventricle. There was a mass of grayish-yellow material in the liver, measuring two by three centimetres. It contained caseous material, and proved on examination to be surrounded by a layer of connective tissue, and to be an old gumma.

With the exception of the brain, now to be described, the other organs were substantially normal.

The arteries in the circle of Willis showed several small, insignificant patches of atheroma. In most of them, notably the basilar and left middle cerebral, there was a well-marked growth of connective tissue in the wall of the intima. The calibre of the vessels was thus distinctly encroached upon, but by no means completely obliterated. In many of these regions was found the small-celled growth of periarteritis as well. There was no alteration in the color or consistency of any part of the brain, and no other change was found. A microscopic examination of the affected arteries showed the lesion to be arterio-sclerosis, which involved to a varying degree almost the entire circumference of the vessel. The lumen was thus not obliterated, but very materially encroached upon.

The possibility of the occurrence of death under such circumstances with brain-symptoms, but without brain-lesion, is alluded to by Delafield and Prudden;[20] but I have not found any recorded cases. The explanation of the cause of death here is not entirely clear. It seemed to me that there might perhaps have been a spasmodic contraction of the muscular coat of the middle cerebral artery, or of several of its branches, which, in addition to the encroachment upon its lumen produced by the new growth, was sufficient to cut off blood-supply to the parts to which it is distributed; that this had occurred several times, each time causing temporary ischæmia of important brain centres; and that in the final attack it had lasted long enough to produce death, but that it was not complete enough, or of long enough duration, to cause softening.

That similar arterial spasm takes place in the retina[21] and can be seen with the ophthalmoscope, there seems to be abundant evidence; that it occurs in the coronary arteries seems extremely likely, from the occurrence of sudden death from cessation of heart-action without embolic or other permanent closure of a sclerosed coronary artery. I have myself diligently sought to find other cause of sudden death in a subject of angina pectoris, whose heart muscle was not degenerate, and believe that arterial spasm alone will account for it under these circumstances.

The effect of this disease occurring in the coronary arteries has been very carefully studied, and many

[20] Handbook of Pathology, Anatomy and History, New York, 3d edition, 1889, p. 290.

[21] E. G. Loring: New York Medical Record, 1886, pp. 79 and 80.

contributions have been made to the literature of this part of the subject. Independently of the serious effects produced in this way, there seems to be good ground to believe that valve-lesions, especially of the aortic valve,[32] are often caused by changes in the small arteries which supply them.

That angina pectoris should be produced by this lesion in the coronary arteries needs only to be mentioned. In passing, it may be proper to say, however, that this is not the only cause of that serious and painful disease. That arterial spasm, localized and general, seems to be brought about by this lesion, as already remarked, seems again proved by the fact that attacks of angina often are accompanied by differences in radial pulses,[33] by localized areas of anæmia, and by increased arterial tension in general. Sudden transitory blindness is known to occur in one or both eyes in conditions of aortic stenosis, and the explanation offered for it is spasm of the cerebral arteries.[34] It is known that in generalized arterio-sclerosis sudden complete blindness can occur with no lesion of the eye visible with the ophthalmoscope. The most plausible explanation seems to be supposed vascular changes in the occipital lobes.

Fibrous myocarditis is a common lesion following the occurrence of this change in the coronary arteries. It is not long since a sudden death came under my notice in the person of a prominent surgeon from the supervention of thrombosis upon the existence of those two lesions in the structure of the heart. Thrombosis is exceedingly common in consequence of the roughening of the arterial wall which is frequent in advanced conditions of this lesion.

The various consequences of fibrous myocarditis, from the functional disturbances which it causes to the development of cardiac aneurism, need not occupy our time.

Much interesting material upon this subject has been collected by Lüttich, of Hanover, in Schmidt's Jahrbucher, vol. ccvii, p. 22. The most important paper there quoted is by Leyden.

It is not at all necessary for the muscular structure of the heart to have become degenerate as a consequence of sclerosis in order to account for sudden death occurring from the sudden stoppage of a coronary artery.[35] The heart-muscle may be healthy or even hypertrophied under these circumstances.

In slowly developing conditions of fibrous myocarditis the heart may become very extensively diseased before serious symptoms result, and death may occur only after protracted feebleness and suffering.

Acute thrombotic softening, or hæmorrhagic infarction in the myocardium can occur in consequence of sclerotic thrombosis of a coronary artery. This lesion occurs most frequently in the wall of the left ventricle, and is the commonest cause of rupture of the heart.

When the heart-muscle *is* degenerate in association with lesion of the coronary arteries, we are apt to find the fibrous change in it to which reference has just been made. Fibrous masses may be diffused through the muscle or there may be only a circumscribed area of such tissue. In this latter case it is usually situated in the left ventricle, near the apex, and is not seldom the origin of a cardiac aneurism.

[32] Lancereaux: Schmidt's Jahrb., vol. 208, p. 137.
[33] Maladies du Cœur et des Vaisseau; Huchard: Paris, 1889, pp. 350-219.
[34] Kœnig, op. cit. Paris, 1890.
[35] E. Leyden: Ztschr. f. Klin. Med., vii, 5, u. 6, 1884.

The symptomatology of fibrous myocarditis is of extreme interest, but would take us a little too far from our subject.

Demange[36] has published four cases of disseminated spinal sclerosis associated with general arterio-sclerosis. In some of these the arterial lesion is most pronounced in the cord. Miliary aneurisms are common, and hæmorrhages into perivascular spaces.

In one case a copious hæmorrhage occurred in cervical cord. A perusal of his cases would lead to the belief that the disease which he describes differs in its symptoms, as it does in its etiology, from the ordinary disseminated sclerosis.

Mendel[37] claims to have found arterio-sclerosis in several small branches of the middle cerebral in a case of progressive paralysis of the insane. He believes that it may be the indirect cause of hydrops of the pericellular spaces, causing congestion of lymphatics, in consequence of its disturbing influence over arterial and venous circulation. He thinks, apparently, that it may be a frequent (possibly essential) lesion in progressive paresis.

Numerous instances are recorded of serious disturbances of nutrition of extremities associated with this lesion of the arteries.

Will[38] narrates a case in which gangrene occurred in both upper extremities, from finger-tips to middle of forearms. The patient was fifty-two years old, not syphilitic, and no other causative influence could be found. This is said to be the third carefully examined case of this kind.

Hutchinson[39] and Klotz[40] ascribe gangrene of lower extremities to this lesion, and record cases in point.

It seems not unlikely that this condition may have more to do with senile gangrene than has been supposed.

D'Ornellas[41] describes a case of gangrene of the fingers in a syphilitic, necessitating amputation. The patient was forty-five years old, and had been infected by syphilis twenty years previously. Pulse was absent in radial, ulnar and palmar arch, as well as in lower third of brachial. The arteries felt like tough cords. Under specific treatment the patient made a good recovery, except so far as the loss of his fingers. He was seen by Fournier, Verneuil, Duplay and others, who concurred in the diagnosis.

Hutchinson[42] describes a case of senile obliteration of temporal arteries in a man eighty years of age, apparently due to sclerosis. The vessels felt like hard cords. While the process was going on, there were much pain and tenderness in them, both of which disappeared when it became complete.

There was no gangrene nor any other symptom than those mentioned.

Thoma's[43] discovery of the presence of pacinian bodies in arteries explains the occurrence of pain as a symptom of arterial disease. He believes that many of the rheumatoid pains, which occur in the chest in people from thirty-five to forty-five years of age, are to be thus explained. Thus, also, he explains the pain

[36] Revue de Méd., 1885, Nos. 1 and 7 quoted in Fortschritte d. Med., 1885, p. 186, and 1886, p. 64.
[37] Berliner Klin. Woch., 1883, 17. Quoted in Fortschritte d. Med., 1883, p. 330.
[38] Berliner Klin. Woch., xxiii, 17, 1886. Quoted in Schmidt's Jahb., 210, p. 167.
[39] Archives of Surgery, London, 1889-90, i, 323.
[40] New York Medical Journal, October 8, 1887.
[41] Ann. de Derm. et de Syph., ix, p. 35.
[42] Archives of Surgery, London, 1890-91, ii, p. 54.
[43] Centbl. f. Klin. Med., 1889, p. 29.

produced by a beginning aneurismal dilatation, before it is large enough to press upon surrounding parts. By their involvement one would explain the acute pain produced by the lodgement of an embolus in a peripheral artery.

PHLEBO-SCLEROSIS.

Of late years evidence has accumulated which goes to show that a similar lesion exists in the veins. A paper, by Sack [44] is instructive as showing its relation to the lesion in the arteries. It is shown that the two sets of vessels are likely to be simultaneously affected in the same individual, and the lesion in the veins probably does not differ in etiology from the arterio-sclerosis.

According to Sack, phlebo-sclerosis occurs most commonly in the lower extremities, a fact which is also true of the arterial lesion. He ascribes its frequency in this location to the sluggishness of the circulation here and to variations in blood-pressure. Not only in general, from their dependent position, is the circulation less active in the lower extremities than elsewhere, but there are likely to occur local causes of congestion in them, such as ascites, pregnancy, heart disease, etc.

The nodose form does not exist in the veins. When disseminated patches are found in them, it is likely that they represent the beginning of the diffuse form.

Pokrovsky [45] has also published an elaborate paper on phlebo-sclerosis. He claims that there *is* a nodose form of the affection, and that many consecutive changes and degenerative processes follow and accompany it. Spillmann,[46] of Nancy, has written lately on the same subject. He quotes extensively from a thesis by Henry Thiebaut,[47] who seems to have devoted much time and attention to this subject.

Although numerous writers concur as to its existence and distribution, no one seems yet to have been able to trace to it any grave consequences. Similar lesion has been also found in the capillaries. Here the disturbance of function produced manifests itself by an increased permeability of their walls, in consequence of which œdema of the tissues result.

The process seems to be so widely spread throughout the vascular system as to justify the name angio-sclerosis which several observers have applied to it.

ON THE ETIOLOGY OF EPILEPSY, WITH SPECIAL REFERENCE TO THE CONNECTION BETWEEN EPILEPSY AND INFANTILE CONVULSIONS.[1]

BY G. L. WALTON, M.D.,
Physician to the Neurological Department of the Massachusetts General Hospital,
AND C. F. CARTER, M.D.,
Assistant Physician to the Neurological Department of the Massachusetts General Hospital.

Before considering the relation between infantile convulsions and epilepsy, it will be well to fix in our minds the true meaning of the various expressions which denote increased muscular action, as even the fundamental matter of definition furnishes confusing inconsistencies in the works of the most recent authorities, in which we not infrequently find the terms contraction and contracture, spasm and convulsion, used almost interchangeably.

Contraction, or drawing together, implies in itself nothing pathological, but is a general term applied to the shortening of any tissue, though most commonly used regarding muscles; this process may be either physiological or pathological.

Contracture is a more or less permanent contraction.

Spasm is an involuntary contraction of muscular tissue, and may be tonic or clonic.

Convulsion is a generalized spasm, either tonic, clonic, or both, and is likely to be accompanied by loss of consciousness and other manifestations, though not necessarily so.

All these terms are used to describe symptoms, whereas *epilepsy* is an idiopathic *disease*, that is, "a disease conceived by itself, which is distinguished from eccentric convulsion, from the spasms of poison, from the convulsions that result from organic changes in the cerebro-spinal centres, and from every other form of known and recognized disturbance. It is certainly true, that an irritation of the foot, in the digestive tract, or in the convolutions of the brain, may cause, not only simple convulsions but also epilepsy proper, still, the difference should be recognized. Convulsions imply a condition of increased irritability; in epilepsy this irritability has an existence of its own, depending upon a faulty nourishment which exists after the eccentric irritation has been removed." (Reynolds.)

The distinction so clearly enunciated many years ago seems to have been curiously overlooked by some of the most recent writers, whose efforts at classification lead the reader into numberless contradictions, and retard, rather than advance, our knowledge of the subject.

In illustration we will only quote Hamilton, who, in Wood's "Hand Book," after defining epilepsy as a disease in which sudden losses of consciousness are attended by more or less convulsive muscular action, proceeds to describe a case of defective mental development with malformation of the skull, as an epileptic, and to include under the causes of epilepsy meningeal or osseous thickening, exostoses, vascular dilatation and sclerosis-atrophy or hypertrophy, and the existence of tumors, all varieties of fracture and depression, and subdural cysts, also protracted hæmorrhage and metallic poison; the convulsions following sunstroke, however, with curious inconsistency, he regards as hardly true epilepsy. This author even gives the reader to understand (page 706) that the convulsive seizures of general paralysis should be classed under epilepsy, with accompanying dementia. Thus, under the morbid anatomy and pathology of *epilepsy*, he states that "in cases where dementia or other mental troubles are found, and especially in those in which the mental disturbance takes the form of general paresis, we may expect to find a well-diffused cortical sclerosis."

Again, while he states that uræmic and alcoholic convulsions should be differentiated from epilepsy, he includes metallic poison under its etiology — a distinction hard to understand.

In clear-cut contradistinction to these confusing statements, Westphal has said, "Not every patient with mental or nervous trouble, who has epileptoid or epileptiform attacks, should be classed as an epileptic."

In epilepsy it may fairly be assumed that an exalted

[1] Read before the Boston Society for Medical Improvement, May 25, 1891.

[44] Virchow's Archiv, cxii, 1888, p. 403.
[45] St. Petersburg Inaugural Dissertation, 1890; and London Medical Recorder, 1890, p. 362.
[46] Gazette de Med. et de Chir., 1890, p. 480.
[47] Thèse de Nancy, 1890.

degree of irritability exists in certain motor centres. Whether those of a special convulsive area in the pons or medulla, as held for example by Küssmaul and Tenner, Brown-Sequard, Schiff and Nothnagel, or in the cerebral cortex, as held by Ferrier, Luciani, Bartholow, Unverreicht, Munk, Bubnow, Heidenheim and Horseley,[2] the writers will not at present commit themselves to an opinion. This irritability renders liable a general convulsive discharge on slight provocation, or even, at intervals, spontaneously. It is this underlying condition which constitutes the *disease*, the *convulsion* being only a symptom, nor is the convulsion even an essential symptom — as is evidenced by petit mal — the loss of consciousness being far more constant.

Writers are practically unanimous in ascribing to heredity the chief place in the etiology of epilepsy, mentioning not only the neuroses and allied neurotic temperament, as well as epilepsy proper in the ancestry, but also apoplexy and other organic affections of the central nervous system, which depend in no degree on a neuropathic taint. It is hard to see how the latter can play a very conspicuous part in the causation of epilepsy, in the progeny of the sufferer, however liable they may be to produce convulsions in his own case; and even regarding the neuroses, the investigations of the writers would lead them to the belief that even this connection has been overestimated. Migraine, for example, has been somewhat extensively regarded as analogous to epilepsy, while in point of fact their only similarity lies in a spasmodic recurrence with intervals of freedom. That one can pass into the other, or beget a tendency to the other in the progeny, is a matter of great doubt.

Wilks,[3] dissenting from the prevailing view on this point, states that he has only known of one case where the two affections co-existed, and has never known the one disease to pass or develop into the other. He alludes to the remarkable exemption of epileptics from headache, and dwells on the fact that remedies act far differently on the two, for example, antipyrine and the bromides.

Again, Lamoine [4] in discussing the etiology of epilepsy, is inclined even to deny the inheritance of the disease, and allows a secondary part to hereditary neurotic predisposition.

The discussion of this point may be left to a future investigation, and it is only mentioned here in passing, to show that the long-established views on the simple question of heredity are not universally accepted.

Coming to the question with which we are chiefly concerned in this paper, namely, the connection between infantile convulsions and epilepsy, a study of the authorities shows an almost unanimous expression of opinion that the former predisposes to the latter, a position which the writers consider untenable.

In infancy we have physiologically to do with an irritability analogous, perhaps, to that already mentioned as characteristic of epilepsy, so that convulsions are brought about by sources of irritation either inactive in the adult, or producing a different train of nervous symptoms less explosive in character. This irritability is, however, during the period of early development, physiological in the majority of cases, not pathological, and we should be chary of pronouncing the resulting convulsions epileptic. This does not, of course, preclude the possibility that we have to do with one of the exceptional cases where convulsions mean epilepsy, beginning in childhood, a question which can only be determined by their continuance and nature. We have no more right to associate with epilepsy infantile convulsions arising upon intestinal or other irritation, through the agency of this physiological irritability, than we have to regard the regurgitation of food at this age as due to a pathological state of the vomiting centre. Indeed, the feverish condition which usually precedes the convulsions of infancy is in marked contrast to the condition preceding a true epileptic attack.

Such a course of reasoning as this will lead us to view the cases, as they present themselves, free from bias, and should prevent our acceptance of isolated cases of coincidence as proofs of an underlying principle, an error into which we are liable to fall if we accept blindly the dictum of tradition.

This subject should not be regarded as one of simply scientific interest, for we are forced in practice to express definite views upon it, and the realization that our answer may remove or deepen, as the case may be, a warrantable anxiety on the part of parents and friends, will lead us to consider carefully all evidence bearing upon the point at issue.

Let us consider, first, the age of commencement of true epilepsy. Statistics will naturally vary somewhat, but our observations agree in a general way with those previously published, at least to the extent of showing that true epilepsy *may begin* in infancy, and become continuous, a fact which will prevent our going to the opposite extreme and assuring the parent that there is *no* liability that the convulsions will continue.

Starr [5] has formulated the following table.

AGE OF ONSET.

Birth to 5 years	29 cases.
5 to 10 years	22 "
10 to 15 "	30 "
15 to 20 "	16 "
20 to 30 "	30 "
30 to 40 "	9 "
40 to 50 "	8 "
50 to 60 "	3 "
Age unknown	18 "
Total	165

Moreau's tabulation,[6] of 995 cases is as follows:

At birth	87 cases.
Infancy	25 "
2 to 10 years	281 "
10 to 20 "	364 "
20 to 30 "	111 "
30 to 40 "	59 "
40 to 50 "	51 "
50 to 60 "	13 "
60 to 70 "	4 "
Total	995

According to Starr, therefore, 59 per cent. began before the age of 20 and according to Moreau 76 per cent.

Our own tabulation of 133 cases, treated during the last three years at the Massachusetts General Hospital, is given in the next column.

Percentage up to the age of 20=58. A comparison of our percentages with those of Starr shows a marked similarity.

The 133 cases mentioned by the writers, occurred

[2] For theories regarding pathology, with bibliography, see Prize Essay of Hare. (F. A. Davis, 1890.)
[3] Lancet, August 11, 1888. [4] Le Progrès Médical, April 23, 1888.
[5] Familiar Forms of Nervous Disease. New York, 1890, p. 256.
[6] Mem. de l'Acade. de Méd., Paris, 1853.

amongst 2,539 cases of all varieties applying for treatment at the Neurological Department of the hospital, making a percentage of 5¼, a proportion slightly lower than the estimate of Reynolds (about 7 per cent of all cases of nervous diseases), also than that of Putzel (a little over 6¾ per cent).

The lower percentages found by the writers, unless possibly accidental, are probably due to care in limiting the diagnosis.

Age of Onset.

Birth to 5 years	20 cases.
5 to 10 years	18 "
10 to 15 "	20 "
15 to 20 "	19 "
20 to 30 "	35 "
30 to 40 "	12 "
40 to 50 "	3 "
50 to 65 "	4 "
Unknown	2 "
Total	133

	Starr's.	*Writers'.*
Birth to 5 years	17.67%	15.00%
5 to 10 years	13.33	13.50
10 to 15 "	18.17	15.00
15 to 20 "	9.75	14.33
20 to 30 "	18.17	26.33
30 to 40 "	5.33	9.00
40 to 50 "	4.83	2.25
50 to 65 "	1.83	3.00
Unknown	10.92	1.50

On reviewing the literature concerning infantile convulsions as a predisposing factor in epilepsy, one finds a prevailing, though not unanimous, affirmative opinion.

Neimeyer says: "It (epilepsy) begins not rarely, in the first years or months of life; one finds, also, sometimes, that patients in whom the disease first declared itself later, suffered already in early childhood from convulsions."

Webber:[7] "Severe and prolonged convulsions in infancy are very frequently followed by epilepsy later in life."

Starr[8] states that "infantile convulsions are the most common of all predisposing causes of this disease."

Nothnagel:[9] "In hereditary epilepsy the attacks are apt to begin before the twentieth year. Such patients suffered from eclampsia often in first dentition and remain apparently healthy until the outbreak of epilepsy."

Althaus:[10] "Where epilepsy is hereditary, the infant is liable to attacks of eclampsia, and true epilepsy is developed about, or at any time previous to puberty."

Among other authors expressing the same opinion, may be mentioned Rosenthal,[11] Hamilton,[12] Bastian,[13] Brown-Sequard,[14] Seguin and Ranney.[15]

A certain degree of dissent from the prevailing view on this point has been already expressed.

Putzel[16] says, for example: "We not infrequently notice that epileptics have suffered from eclamptic attacks during the period of dentition, and some authors believe that frequently recurring eclamptic convulsions may produce an epileptic habit in the brain, and thus give rise to the independent existence of epilepsy. But the eclampsia of childhood is so overwhelmingly more frequent than epilepsy that we are very sceptical with regard to its efficiency as a cause of the latter affection."

Hammond:[17] "They (infantile convulsions) may pass into epilepsy; but if they do not, I have never been able to find a single instance in my experience in which epilepsy ensuing in adult life has been preceded by the ordinary infantile convulsions." This experience would point to the fact that infantile convulsions once discontinued, no fear need be expressed that epilepsy will ensue later, a view which coincides with our own, though our experience is not indentical with that of Dr. Hammond, that *no* case of infantile convulsions has been found to precede epilepsy, our observations showing, however, no more such cases than can be explained by coincidence, as our tables will show.

Eustace Smith[18] says: "As a rule, single fits, or convulsions occurring without other signs of nerve-lesion in a healthy child, are purely reflex, and have no gravity whatever."

Flint:[19] "A paroxysm of convulsions in an infant or child often, with good reason, occasions anxiety lest it may prove the beginning of epilepsy. It is not always practicable to determine the point at once. There is more reason to apprehend epilepsy in proportion as the convulsions are not otherwise to be accounted for. Their non-recurrence affords the only positive proof that they are not epileptic."

From an *a priori* point of view it might be assumed that the children most liable to have convulsions on a given irritation, possessed a greater convulsive tendency than others, and might therefore be expected to offer a somewhat more probable basis than others, for future attacks. When we come to consider, however, the vast and vital step from simple reflex convulsions to true epilepsy, this argument will not weigh very heavily, against facts. It is to these facts, as far as come under our experience, to which your attention is called.

We have carefully analyzed 70 successive cases of pure epilepsy in hospital and private practice with reference to the question of previous infantile convulsions, the opportunity being also taken to find out whether the brothers and sisters have been subject to them. The first point was to discover the relative tendency for the two affections to fall together or separately in the same family. The number could have been made much larger, but care has been taken to exclude cases in which trauma or organic brain disease was likely to have played a part, as well as those in which uncertainty existed regarding the early history. We are almost of necessity restricted in this investigation to those cases whose parents we are able to question, as few persons, well or otherwise, can be depended upon to state whether they themselves or their brothers and sisters had convulsions in infancy. Of these 70 cases, nine commenced in infancy and became continuous; 56 had no history of convulsions in childhood, five only had a history of infantile convulsions followed by a period of immunity.

Of these five cases the history was as follows:

Case I. Typical epileptic. An infantile convulsion occurred at the age of one year, nothing further appearing until the age of sixteen, when true epilepsy began.

[7] Nervous Diseases, New York, 1885, p. 348.
[8] Loc. cit., p. 226.
[9] Ziemssen.
[10] Dictionary of Nervous System, New York, 1878, p. 247.
[11] Loc. cit., 1879, Trans., New York, p. 339.
[12] Wood's Hand-book of the Medical Sciences.
[13] Quain's Dictionary of Medicine, p. 303.
[14] Loc. cit., p. 450.
[15] Lecture on Nervous Disease, 1888, p. 473.
[16] Functional Nervous Disease, New York, 1880, p. 68.
[17] Diseases of the Nervous System, 1881, p. 702.
[18] Quain's Dictionary of Medicine, p. 695.
[19] Practice of Medicine, Philadelphia, 1873, p. 754.

CASE II. Typical epileptic. Had a single convulsion at the age of two. Epilepsy commenced at the age of twelve.

CASE III. Petit mal. Had four infantile convulsions between the ages of one and four. Present trouble began at eleven.

CASE IV. Typical epileptic. Had infantile convulsions. Epilepsy appeared at twenty-seven.

CASE V. Typical epileptic. Had three infantile convulsions in one year. Epilepsy began at fourteen.

Apart from these five cases there were none, among the seventy cases investigated, in which infantile convulsions had occurred, to disappear and be replaced by epilepsy, though, as stated, in nine the epilepsy came on in infancy and remained constant. These nine cases alone would show the possibility of epilepsy beginning at an early age, a fact already established, and should put us on our guard against assuring the parent of a child with its first infantile convulsion, that epilepsy is not to be considered at all. Such convulsions having, however, once disappeared, it would seem that we may reassure them with confidence, for the proportion of five in seventy (one in fourteen), is too small to be regarded as any more than a coincidence.

Curiously enough, the investigation of the *other children* (grown-up) in the families of epileptics has shown a much larger proportion of infantile convulsions among them than among the epileptics themselves, a fact which may possibly show an abnormal convulsive tendency in such families, but illustrates in a striking manner the absence of interdependence between the two affections. J. Lewis Smith, in support of the same view, even states that he has been struck by the *immunity* from infantile convulsions among epileptics, though we hardly imagine that the word immunity was meant to be taken too literally.

Various estimates of the percentage of epileptics in a community range around six in one thousand, no estimate being much higher than this. No statistics previously existing as to how many cases of infantile convulsions occur in a community, the writers have collected data on this point with the following result: Out of one thousand children taken consecutively at random from all classes of society, 111 have been found to have a history of infantile convulsions. Now, taking the percentage we find of infantile convulsions among epileptics (one in fourteen), we have the two affections occurring coincidently once in two thousand individuals. When we consider how many cases, therefore, of infantile convulsions occur in every two thousand individuals by our statistics, (approximately 220,) it is at once evident how rarely the one condition is followed by the other. This would reduce the chances of a given child with infantile convulsions becoming an epileptic later in life, to something like one in 220, certainly hardly sufficient to warrant alarm, even allowing a balance for difference in statistics, for one in 220 is certainly no more than the average chance of ordinary individuals if six in one thousand is the usual rate. It would certainly seem that the proportion of one in fourteen as compared to one in ten, would place us on the safe side in saying that epileptics are at least no more liable than others to have had infantile convulsions, and conversely, that a child suffering from infantile convulsions is no more likely than any other to suffer from epilepsy later in life, after a period of immunity has removed the case from the class of epileptics beginning in infancy and becoming continuous.[20]

CONCLUSIONS.

(1) Epilepsy may begin in infancy and become continuous.

(2) Where infantile convulsions have ceased for a sufficient time to remove the case from the class mentioned under Conclusion I, the child is no more likely to become an epileptic than any other individual.

A CASE OF INTESTINAL ANASTOMOSIS, BY MEANS OF SENN'S PLATES, FOR THE RELIEF OF COMPLETE CHRONIC OBSTRUCTION CAUSED BY INVAGINATION AND SLOUGHING OF THE UPPER PART OF THE ILEUM. RECOVERY.[1]

BY JOHN HOMANS, M.D.,
Surgeon to the Massachusetts General Hospital, Boston, Mass.

ABOUT the first of December, 1890, Dr. F. W. Chapin, of Springfield, Mass., wrote me in regard to operating on a case of intestinal obstruction. A day or two later he wrote that consultation had decided that the child was too weak to bear any manipulation. On December 21st, he wrote the accompanying letter:

SPRINGFIELD, MASS., December 21, 1890.

MY DEAR DOCTOR:— The patient, a girl ten years old, about whom I sent you a note the other day is alive and perhaps in as good condition as when I wrote. The history of the case is somewhat peculiar. Last July she was suddenly taken with severe vomiting and symptoms of collapse. A sausage-like swelling appeared in the left iliac region, which could not be felt by the rectum. The vomiting was not fæcal nor of fæcal odor. I finally concluded that there was impaction, gave a dose of calomel, and she immediately recovered. At times during the summer, however, she would have pain in the bowels, and on one occasion vomited a good deal. In September, or early in October, she was taken down again in about the same way as in July; a dose of calomel was given and partial relief was obtained, but the next day excruciating pain came in the bowels, a tumor appeared lying across the epigastric region, or a little below, and complete obstruction followed. About the first of November she passed a piece of intestine, and was better for a few days, one or two small fæcal discharges taking place. Obstruction returned, however; and finally, about three weeks ago, a movement (small and flattened) was obtained by means of calomel. We have not been able to get anything through her since then. She has not vomited much, has taken a little nourishment by the mouth, but has been chiefly fed by the rectum. She is greatly emaciated, and her pulse is small and feeble generally, though sometimes of considerable volume under the influence of morphine, of which she takes about one-eighth of a grain every four to six hours hypodermically. She has always been a rather delicate child, and has had several attacks of bronchitis. I have thought that there may be tubercular trouble of the intestines in addition to the purely mechanical trouble. I had three local physicians see her with me about the time I wrote you, and they all

[1] Read before the Boston Society for Medical Improvement, May 25, 1891.

[20] It may be objected to our statistics, that the parents' word was taken regarding infantile convulsions. This is, however, the ground upon which the statement in the text-books has been based, in which epileptics are said to have had infantile convulsions; in fact such statements are the only data upon which we can proceed. These statements may err, it is true, but the errors will tend to counteract each other after all, for whereas some parents may mistake something else for a convulsion, others will overlook or conceal them. We have taken the greatest care to exclude as far as possible convulsions arising from organic disease, and in one family where each of six children is stated to have had convulsions during scarlet fever, the entire family was excluded.

felt confident that the patient was too feeble to endure an operation. We told the parents that there was perhaps a ghost of a chance that an operation would relieve her, but that there was no reasonable chance. They then said that they preferred not to have the operation undertaken. When the movement from the bowels was obtained three weeks ago (small and flattened, as I have said), I felt that, although there was evidently a stricture at the point where the intestine sloughed off, still we might get the bowels to act for some time, and thus be able to nourish her and get her strength up to a point where an operation might be reasonably safe. She has grown thinner and weaker, however, and I do not suppose there is any chance now. I do hate, though, to go and see a patient day after day and do nothing. How successful has been the operation for anastomosis of the intestine? If any thoughts occur to you about this case, I should be glad of them.

Sincerely yours. F. W. Chapin.

On receiving my answer volunteering to go to Springfield, he requested me to come. On arriving at Springfield, I received the following account of the case from Dr. Chapin, and subsequently from him an account of the convalescence which he carefully watched.

Florence B., aged ten years. The patient has never been a very strong child. During the past five years, previously to the present illness, she has had several severe attacks of bronchitis; and, during the same period, she has had, once in two or three months, sudden attacks of severe pain in the bowels, lasting from ten to thirty minutes.

The present illness began July 22, 1890. On that day I was called in great haste, and found her in a state almost of collapse, suffering intense pain in the bowels, and vomiting. A sausage-like tumor was discovered in the left iliac region, and intussusception was suspected. Rectal injections of sweet oil and glycerine were used for two days without effect. On the third day, July 24th, six half-grain calomel tablet triturates were given by the mouth, and they were followed, in the course of a few hours, by a large dejection. The sausage-shaped tumor disappeared, and the patient was soon about the house and out of doors. She did not fully recover her strength, however.

On August 10th, during my absence from the city, she was again taken with pain in the bowels, and also suffered for a few days with acute bronchitis. She was attended by Dr. Stebbins. After this attack she went along pretty well until October 4th, when the pain in the bowels came on again severely for an hour.

On the 6th of October the pain returned, with vomiting. I gave calomel and castor oil and injections of glycerine and water. The bowels moved, but not very freely.

On the 14th of October she was taken with pain and vomiting, more intense than ever. The intestines, knotted up hard, were plainly discernible through the abdominal walls. Morphine was, of course, given as usual, hypodermically. The next day, October 15th, a somewhat irregular-shaped swelling was observed, lying, not in the left iliac region, as in July, but across the abdomen above the navel. Between this time and November 1st I held several consultations with Drs. S. F. and W. H. Pomeroy and G. S. Stebbins. The pain and vomiting continued, the swelling persisted, and the bowels failed to move in spite of large injections of sweet oil, castor oil and glycerine. Calomel, sweet oil and castor oil were also attempted by the mouth, but were rejected. The patient was fed almost entirely by the rectum.

On October 20th there were two small discharges of fæces. On November 4th I was again called in great haste to the little sufferer and found her in great agony, on her face and knees in the bed, and straining as if at stool. Examination revealed a piece of sloughing intestine protruding from the anus. I took hold of it and gently pulled it out. The mass had the characteristic odor of sloughing tissue and measured, when laid out, about three feet. Portions of it were mere shreds, however, and probably the actual length of intestine discharged was not more than eighteen inches.

After the discharge of the portion of the intestine, the patient was much better for a period of four days, during which time she took and retained solid food by the stomach, and the morphine was omitted. On the second day after passing the intestine the bowels moved freely.

On November 6th, four days after the sloughing mass was discharged, she began to vomit again, the abdominal pain returned, and the intestine was again knotted, as could be plainly detected through the abdominal wall. Morphine hypodermically and rectal feeding were again resorted to. Enemata of glycerine and oil, and calomel by the stomach produced no effect until December 1st when, following a dose of six half-grain calomel tablet triturates, the patient had a peculiar, flat, tape-like movement.

After this there was no discharge from the bowels, the patient retained very little by the stomach, was fed almost wholly by rectal injections, took from one-eighth to one-fourth of a grain of morphia every three or four hours, emaciated steadily and to the last degree.

The diagnosis of stricture following the sloughing of an invaginated portion of intestine had been promptly made upon the return of the symptoms of obstruction, four days after the discharge of the sloughing mass, and the question of the possibility of relief through surgical interference had been many times considered and had been presented to the family. Only feeble hopes of success by means of an operation could be held out, however, and so the case was allowed to drift on until the eleventh hour, when I became so impressed with the feeling that relief might still be had that I prevailed upon the parents to allow me to send for Dr. Homans.

Operation by Intestinal Anastomosis.

On December 27, 1890, with the assistance of Drs. Mixter and Chapin, and in the presence of Drs. S. F. and W. H. Pomeroy and Dr. George S. Stebbins, intestinal anastomosis was done. Patient extremely emaciated. Abdomen at first opened between umbilicus and pubes, narrowly escaping cutting open the bladder, which was distended and drawn up. Later the opening was extended upwards. A little ascitic fluid ran out. The cæcum and ascending colon and a portion of the transverse colon, filled and stuffed with fæces or with rectal alimentation, presented. The cæcum was about the size of the muscular part of a man's forearm. It was turned out of the abdomen to make more room, and the distended small intestine was run over until the duodenum was reached, and then, from the same point, was run over downwards to the cæcum; and the obstruction was found at a point in the upper part of the ileum. Here the intestine seemed cut off down to the mesentery; there was no continuity of the bowel, but only of its mesenteric attachment. All the calibre of the bowel for a space about a line

long had disappeared, and only the mesentery and a little cord, like that between two sausages, remained. The loops of the intestine in the vicinity were somewhat adherent. With Dr. Mixter's assistance, the intestine was compressed between the thumb and forefinger above and below the points chosen for the insertion of the plates. After the anastomosis had been made according to Senn's method, the peritoneal surfaces were united around the rings by additional sutures. The abdomen was then washed out with warm water and the incision closed. During the operation much offensive gas and considerable whitish, pultaceous, offensive substance had passed per anum. The wound was sewed up and covered with iodoform gauze, absorbent cotton and a bandage.

At the close of the operation the patient was almost pulseless, and she reacted slowly, abdominal pain returning in about two hours, and free urination taking place at the end of eight hours.

On January 1st, the fifth day after the operation, the patient passed gas several times per rectum, and, on the same day, the bowels moved slightly. The swathe was changed on this day also, and the abdomen was found soft and not distended.

On January 2d, the bowels were moved by Rochelle salts.

On January 3d, the bowels moved three times freely. From that time on, the bowels moved every day or two freely, large clay-colored masses being discharged, until, by the 20th of January, the stools became normal in size and color. Meantime the abdominal pain had persisted, and the patient had vomited occasionally. Rectal injections of peptonized milk and brandy, which had been used for some days after the operation, in connection with milk punch, Kumyss and Mellin's food by the stomach, were gradually discontinued. By the middle of January the patient was taking solid food.

The pain and vomiting were very persistent, however, especially the former, and it was fully six weeks before the hypodermic injections of morphia could be discontinued. In spite of the amount of nourishment taken, the patient continued to emaciate and grow weak. At one time, early in February, she was for a few days delirious from sheer exhaustion, and for several days suffered extreme pain in her extremities. Her appetite became voracious, but the food seemed to do her no good. Her emaciation was extreme. Finally, in the latter part of February, under the use chiefly of predigested foods, she began to gain flesh, and the improvement soon became rapid.

During her long illness the legs had become so firmly flexed upon the thighs that it required several weeks of persevering effort on the part of her mother to extend them. The bony plates used in the operation were probably thoroughly digested, as nothing was seen of them in the discharges.

The little girl now weighs sixty pounds, has no intestinal symptoms, and is the picture of health.

A PHYSICIAN in this vicinity was recently called to a family, which he found in such destitute circumstances that he gave, in addition to his prescription, a five-dollar bill. Happening in the next day, he discovered that his gift had been thus spent: three dollars had gone to the priest, and two dollars to get another doctor.

ON THE DETECTION OF A RUPTURED BLADDER.

BY ROBERT F. WEIR, M.D., NEW YORK.

IN Dr. A. T. Cabot's interesting paper on the proper treatment of a ruptured bladder, which appeared in the *Boston Medical and Surgical Journal*, October 15, 1891, he has kindly mentioned with commendation a method for detecting this injury which I reported to the profession in 1887.[1] But the test may be considered by many as an incomplete one, as given by Dr. Cabot.

Reference to my original article[1] will show that although corroborative weight is obtained by determining that the quantity of fluid thrown in the previously emptied bladder is the same in an undamaged viscus as that which flows out again through the catheter, yet this test alone is not considered by me sufficient. To be of positive service, such a test should be applied several times, and with a decided amount of distention of the bladder — this latter is not always carried out.

In sundry cases previous to 1887 I had employed this method alone, and not always with satisfaction. In one case where the total amount, five ounces, thrown in, was returned, the autopsy showed a valvular rent postero-inferiorally with moderate urinary infiltration. From this fact, together with the experience that came with the use of suprapubic cystotomy, I was led to employ in the detection of vesical ruptures the combined rectal and vesical distention, with a known quantity of water for the latter viscus. The bladder, outlined in this way above the pubis, is only to be confounded with an extravasation augmented by the test, and this is controlled by the measurement of the fluid finally emptied from the bladder. If dulness on percussion above the pubis occurs, and the fluid withdrawn from the bladder is lessened, a rupture extraperitoneally can be inferred. If no dulness nor recognized vesical distention above the pubis takes place, but with diminution of the injected fluid, a rupture either intra-peritoneal or sub-peritoneal postero-inferiorally can be assumed. If the latter exists, a rectal examination, made before, during and subsequent to the test, will show, as it did in one case with me, the increase in the extravasation in that region.

In any case, however, where the site of the rupture cannot be determined with accuracy, it seems to me to be preferable to make an incision suprapubically, where any slight infiltration exterior to the bladder will be revealed; if this has not been torn in front or if nothing is thereby disclosed, the bladder, held up if necessary by a sound introduced per urethram, should be opened sufficiently for digital and ocular inspection. The rectal water-bag is here especially of importance to readily examine the inferior parts of the bladder.

My judgment leans, it will be seen, more to this method of procedure than to the one suggested by Dr. Cabot, of primarily opening the peritoneal cavity and exploring for the rent. I cannot think this latter plan as certain or as free from additional risk as that I have above suggested.

MEDICAL JOURNALS IN PARIS. — A report recently presented to the French Minister of the Interior states that 145 medical journals are published in Paris, whereas there are only 161 non-medical newspapers.

[1] On a Satisfactory Method of Early Diagnosing an Intra-Peritoneal Rupture of the Bladder. Medical Record, January 22, 1887.

Clinical Department.

PERICARDITIS WITH LARGE HÆMORRHAGIC EFFUSION IN A PATIENT WITH GRAVES DISEASE; REPEATED PUNCTURE; DOUBLE DRY PLEURISY; RECOVERY.[1]

BY FREDERICK C. SHATTUCK,
Professor of Clinical Medicine in Harvard University, etc.

M. P., twenty-four years old, of unimportant family and previous history, entered the Massachusetts General Hospital, January 19, 1891. About Christmas she was laid up four days with tonsillitis, at that time very prevalent in town. January 5th she began to suffer from pain and swelling in several joints, feverishness, pain in the cardiac region, and dry cough; though lame, she kept about till the 16th, when she took to bed.

On entrance to hospital the pulse was 120, respiration, 26, temperature, 103.2°. The joint symptoms were slight. The cardiac impulse was not distinct to either sight or touch; the area of dulness was moderately increased; pericardial friction was heard about the apex and also in the aortic area; the pulmonic second sound was somewhat accentuated. The first few days she seemed to improve; the temperature soon, however, began to rise steadily and reached 104° on the 27th, with a pulse of 130, regular. During the access of fever the pericardial effusion increased rapidly, the area of dulness extending from well outside the left, nearly to the right, nipple, and up to the second rib; the motion of the heart could be seen and felt, probably transmitted through the fluid, over the whole of the lower portion of this area.

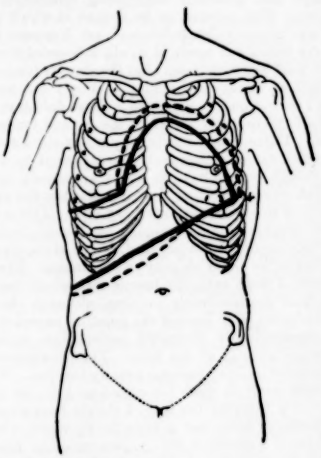
January 28th. The condition seemed so critical that, after consultation with my colleague, Dr. Tarbell, it was decided to try to withdraw the fluid. A trocar and canula, attached to an aspirating pump, was plunged into the fifth left interspace, three inches from the median line, and about an ounce of bloody serous fluid was removed. No more could be got, though the canula was freely movable and unobstructed; on moving the canula adhesions could apparently be felt to break, and the action of the heart was communicated to the instrument with great distinctness. The trocar was then inserted in the fourth right space, two and one-half inches from the median line, where percussion was flat, in the hope that, in accordance with the experiments of Dr. Rotch, this might prove a more productive spot. The instrument was pretty freely movable, but no fluid was obtained. An ice bag was applied to the cardiac area.

January 29th. She was fairly comfortable with the aid of morphia. There was some return of articular symptoms. The action of the heart was irregular and intermittent. Friction was distinct over a considerable area; the extent of the dulness remained about the same.

January 31st. The urine was still intensely acid in spite of large doses of potassic citrate. Cold sponging was ordered on account of the nervous symptoms and the pyrexia, the temperature reaching 105° the evening of the 30th. That day I made her a special visit at 9.30 P. M. The area of dulness was still greater, and the impulse was distinct in the anterior axillary line and fifth space. She was dusky, and the pulsus paradoxus was marked. The trocar was inserted in the fifth left space, four and one-half inches from the median line; only half an ounce of bloody serum could be withdrawn. An hypodermic of morphia was given.

February 1st. Condition about the same. Thinking that perhaps the heart was held above the chief part of the fluid by adhesions, and that I could possibly get in behind the organ, a trocar was again inserted, this time in the fifth space and anterior axillary line, six and a quarter inches from the median line; percussion was flat over this spot and the impulse could be felt. No fluid was obtained though the end of the instrument moved with freedom.

February 4th. The pulsus paradoxus continues; the heart is still irregular; there is no abatement of the effusion. Pleural friction is heard over much of the right chest front and back. In the afternoon sudden delirium.



Solid line, January 19th.
Broken line, January 27th.
Seat of puncture: No. 1, 3 inches from median line; No. 2, 2½ inches; No. 3, 4½ inches; No. 4, 6½ inches.

February 5th. Delirium continued through night, and persists. At three in the morning the pulse was very poor and the respiration choking; the patient was in a dusky pallor and cold sweat. Nitroglycerine was given with apparent good effect. This seemed the turning point in the disease. The delirium disappeared this afternoon. The pulsus paradoxus continued for some days. A systolic murmur developed at the apex. Though very ill and weak for some time, she gradually improved, and steady absorption of the fluid took place. Pleural friction developed over the left side.

February 28th. She sat up with a bed-rest.

March 5th. She sat in a chair for an hour.

The action of the heart continued rapid, and was easily excited, but regular. About this time a slight enlargement of the thyroid gland, which had probably escaped notice during her critical illness, was observed. There was no prominence of the eyeballs, but tremor was well marked.

April 2d to 5th. Convalescence was interrupted by marked swelling of tonsils and uvula without patches.

[1] Read before the Boston Society for Medical Improvement, May 25, 1891.

April 12th. She was discharged, practically well, though weak. The area of cardiac dulness was but little increased; the systolic scuffle was still distinct, and will doubtless persist; all evidences of pleurisy were absent; the cardinal symptoms of Graves disease, save exophthalmos, were evident.

Remarks. The general treatment of the case demands no special consideration. She was at first put on my routine treatment for acute rheumatism, a combination of the alkaline and salicyl. The amount of potassic citrate which was required to make and keep the urine alkaline, was, in my experience, unusual. The salicyl was not well borne. During the period of notable cardiac weakness digitalis was used, for a time freely.

Puncture of the pericardium for serous effusion, is, I think, rarely called for; most effusions, even those of large size, generally undergoing spontaneous absorption. This seemed to be a case in which puncture was urgently demanded, and yet I cannot think that the result was much, if at all, influenced thereby. Twice fluid was withdrawn; but the amount (one ounce and half an ounce) was trifling. Why I did not get more I do not quite understand. That fluid was present in large quantity seems to me beyond reasonable doubt. Twice it was reached by a fair sized and unobstructed canula which moved freely, as if in a cavity; though once adhesions could apparently be felt to break down, the other time this was not the case.

Next, a few words as to the dry taps. This seemed a very suitable case for tapping in Rotch's spot, the fifth right space, as the pericarditis was at the time uncomplicated by either pleurisy or pneumonia. Through an error, I went into the fourth instead of the fifth space, and got absolutely nothing, although the flatness extended well beyond the point of puncture, and the experimentally distended pericardium underlies this space as well as the fifth. The puncture in the eft anterior axillary line was equally fruitless. Where the trocar went on these two occasions I do not know. If it had penetrated the lung, I should have expected the suction to bring out a little frothy blood — which it did not. I certainly did not penetrate the heart itself; I am sure that I did more than penetrate the thin chest wall. The cardiac movements could be seen and felt at all the points of puncture, a fact which makes one a little nervous at first. In two cases of encapsulated and pulsating empyema this winter, I have tapped the pulsating area, both times successfully.

The paradoxical pulse did not reach its highest development in this case: that is, the slowing and weakening of the pulse were distinct to the finger during inspiration, but the pulse did not disappear during this act. This peculiar pulse rhythm is not confined to cases in which tough fibrous adhesions drag upon the aorta during inspiration; it has been observed in cases of pericarditis as well as in other and varied conditions. I have myself seen it this winter during the last hours of life in a patient who had suffered for years with asthma, and in whom the autopsy showed the heart and lungs to be free from serious organic disease.

A PHILADELPHIA man is enthusiastic over the efficacy of advertising. The day after he had inserted in a paper a notice saying that he wanted a boy, his wife presented him with twins, both boys.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

REGULAR Meeting, Monday, May 25, 1891, the President, DR. FREDERICK I. KNIGHT, in the chair.

DR. JOHN HOMANS presented a paper on

A CASE OF INTESTINAL ANASTOMOSIS BY MEANS OF SENN'S PLATES FOR THE RELIEF OF COMPLETE CHRONIC OBSTRUCTION CAUSED BY INVAGINATION AND SLOUGHING OF THE UPPER PART OF THE ILEUM.[1]

Dr. Homans stated that this method was devised by Dr. Senn, by whom the plates (samples of which were shown) were invented. Various other kinds of the same sort of thing have since been contrived. Abbe's rings of catgut, and India rubber rings have been successfully used. McBurney, Bull and other New York surgeons have done a number of cases of anastomosis between the stomach and duodenum, for cancer. I do not remember that this operation of anastomosis by bony plates is described as having been done in New England. A practical point is to make the openings in the bowel just long enough and no longer than to admit the rings, and I think it well to sew the peritoneal surfaces of the bowel together outside and around the rings. I should say that most of the anastomoses that have been done have been between the stomach and upper part of the small intestine.

DR. MIXTER: There has been a considerable number of resections done, the bone plates being used. Several cases have recently been reported by English surgeons, where the pylorus has been resected in this way. Whatever the part of the intestinal tract excised, the ends are turned in and closed by continuous or interrupted sutures, and an anastomosis is made between the two lapped ends of the intestine by means of the plates in the usual manner.

DR. HOMANS: Dr. Halstead does the anastomosis without plates. The advantage of the plates is that a person who is not accustomed to doing these operations frequently, and has not the requisite manual skill to do Halstead's operation, could do one of these operations by Senn's method without any trouble. It is a good operation in cases of malignant annular stricture of the large intestine, which are very easy to find and are apt to be simple and uncomplicated. In other cases of malignant disease of the bowel perhaps resection ought to be done in preference to anastomosis, since the latter leaves the cancer *in situ* and the former removes it. An opening can be made above and below the stricture, and a person who is expert could do it in a few minutes. The trouble with intestinal obstruction as I have seen it, is that where the coils of intestine are greatly distended, and you have hauled them over enough to find the obstruction, you have given the patient a blow almost sufficient to kill him. The sudden cases of obstruction to which I have been called have been, with one exception, cancer, and without previous symptoms, in stout people. Upon opening the abdomen and carefully searching for some time I have found a malignant stricture either at the splenic angle of the descending colon, or in the cæcum, or down behind the uterus in the sigmoid flexure, and I have never be-

[1] See page 488 of the Journal.

fore met with so good a case as this, where the patient had no peritonitis, was healthy, and very thin, so that investigation is easy and harmless. The manner of making intestinal anastomosis varies. This is an example of Senn's method, and is one of the most valuable inventions that we owe to this indefatigable surgeon.

Drs. G. L. Walton and C. F. Carter presented a paper on

THE ETIOLOGY OF EPILEPSY WITH SPECIAL REFERENCE TO INFANTILE CONVULSIONS.[1]

Dr. Webber: Dr. Walton in his paper has spoken of infantile convulsions without specifying the kind and variety. A child may have a convulsion lasting a few minutes, and recover from it by treatment or without, and that be the end of it. A convulsion like that, or several of them occurring at different times, would not necessarily predispose that child to epilepsy. There is, however, a form of convulsions which are severe, the child being unconscious and convulsed for perhaps a half-hour, sometime three or four hours. In such cases I have formed the opinion — I have not seen autopsies — that the nutrition of the brain is affected, and it is such convulsions as that which I have found are followed by epilepsy, that is, epileptics who have had convulsions in infancy have had those severe forms of convulsion. I have not looked up my records; I do not know what proportion of cases I have seen with such a history, but it is larger, I think, than what Dr. Walton has found. I have noticed a good many cases of epileptics with such a history, and it is that kind of convulsion, the severe convulsion lasting a long time, frequently one or two hours, or one half-hour, and then repeated in a very short time, which affects the development of the child. I have seen quite a number of cases where the growth of one side of the child was apparently retarded in consequence of these convulsions. In one very marked case the difference in size could be measured in the head, in the arms, in the body, and in the legs, the whole of one side having been retarded in growth. In such cases there are undoubtedly changes in the brain, which give rise later to the epilepsy. I do not agree with Dr. Walton in the idea that such convulsions are not the cause of epilepsy. I think they are, and I think that it is our duty to caution parents where there are such convulsions as that, to be on the lookout for attacks afterwards. Now, in some of those children the epileptic attacks will commence very soon afterwards and continue during the rest of infancy and childhood. In other cases the epileptic attacks do not appear until perhaps the second dentition or puberty. Very often the parents have overlooked the epileptic attacks, the first form of attack being *petit mal*, and if you crossquestion them you find the child has had these attacks of *petit mal* sometime, beginning perhaps two or three years after the severe convulsions in infancy, but the *grand mal* later.

Incidentally, Dr. Walton spoke of hemicrania as not running into epilepsy. Perhaps it does not run into epilepsy, but I remember one case where hemicrania occurred in early life, and epilepsy seemed to take its place. I only remember one such case.

Dr. Prince: I have very little to say. It seems to me that Dr. Walton's paper is a very valuable contribution to this subject, and goes a good way toward refuting this popular fallacy regarding the origin of epilepsy. I confess that I myself have always accepted on faith rather what the text-books said, and assumed that convulsions in infancy did lead to epilepsy. Now looking back upon my cases, I am struck with the fact that I can recall scarcely one case in which there was a history of the convulsions dating back to childhood. I do not know that I have ever made any systematic attempt to discover whether they had convulsions in infancy followed by a period of freedom, which is one of the important points raised by Dr. Walton. It seems to me it would be very desirable for all of us in the next year or two to make a collective investigation on this subject, note our cases and see where we come out. I should really question whether very many writers have really taken the trouble to inquire into this subject deeply, and I fancy many of them have taken it on faith, as I have.

Dr. Knapp: I am disposed to agree with Dr. Walton theoretically, that epilepsy is a disease *per se*, and that it should not be confounded with convulsions which arise from hysterical causes or from organic brain disease, but unfortunately there are very many cases where we can distinguish only when we have the brain under the microscope. I am sorry that I have not been able, partly from lack of time and partly from the fact that my records are scattered, to tabulate my own cases, so that I am unable to speak from anything more than general impressions, which are altogether misleading, but I do not think, however, that my cases, or the cases in the experience of any one man, are enough to give us conclusive data upon this point. Dr. Walton mentions the physiological irritability of the infant, an irritability making him more prone to convulsions than the adult. This, of course, is to be admitted, but he speaks in a way which seems almost to compare the convulsion of the child with the perfectly normal process of regurgitation. Now I think we should draw a very sharp and distinct line between the two. The convulsion is necessarily and essentially something pathological, as of course Dr. Walton will admit, but I am disposed to lay much more importance than Dr. Walton has done upon the rather sinister significance of convulsions in the child. The latest and perhaps best treatise on epilepsy which I have seen for some time, the recent essay by Hare, admits, as do most of the writers whom Dr. Walton has quoted, the rather grave significance of infantile convulsions. I think we get a rather instructive comparison from the traumatic cases. If, for instance, the patient receives a blow upon the head — an adult with a perfectly vigorous and healthy brain — there is a fracture driving spiculæ of bone into the meninges. Matters go on quietly for a good many years, in some cases twelve or fifteen years, but finally there is a motor discharge. The brain has at last succumbed to the irritation, and the discharges are repeated; the patient has convulsion after convulsion. If that case be taken sufficiently early, and the irritation be removed, the convulsions cease. But in many cases, as Hughlings Jackson has so clearly pointed out, the epileptic habit has been set up, and you may trephine and remove the irritation, but the convulsions do not cease. The same is true in some of the cases, at any rate, of convulsions in children. I believe that the ordinary infantile convulsion is a pathological thing; it is an affair of distinctly sinister significance. The common alleged causes of convul-

[1] See page 485 of the Journal.

sions, indigestion, teething, etc., are of course universal, but only a small percentage of the children have convulsions. That, to my mind, is distinctly significant of a more unstable brain, a more irritable brain. Now the history of these cases is often this: the child has had an attack of indigestion or a trouble with its teeth, and has a convulsion. The mother is alarmed, sends for a physician, and for the next two or three years takes distinct precautions against a repetition of the convulsion. I do not mean necessarily giving bromides, but avoiding the causes. The convulsions are not repeated. The epileptic habit is not set up. But in other cases we have different results, one case I bear in mind now, where the mother said: "O, it is nothing but a spasm. He ate something that disagreed with him"; and continued to let the child fill himself with indigestible food, and the child has had many spasms with indigestion. Such a child, I think, is liable to develop epilepsy. Although I regard convulsions as of sinister significance, I do not believe that they always mean epilepsy. They may be the indication of other affections, the early symptom of some organic brain disease. Dr. Fernald, the other night at the Medico-Psychological Society, reported that in twenty per cent. of all idiots the history began with a convulsion as an infant. I think we make a mistake; I think we do wrong to the mother to say that it may not amount to anything. I think a convulsion in a child is a serious thing. It means a more unstable and irritable brain. Such a child should be guarded against the repetition of the convulsions, against the development of epilepsy or other severe nervous diseases; we must regard that child as unstable, as irritable, and as a subject to be guarded. We must not say: "O, it is of no consequence." If we do, I fear many of these cases will go on developing either epilepsy or serious nervous disease, or, as a physician suggested to me a little while ago, in many of these cases insanity may develop later; a fact he had noted in quite a number of cases.

DR. WILLIAMS: If what Dr. Walton has said is true, I think it is a very important matter. I think where children have symptomatic convulsions it has been the practice among general practitioners to fear epilepsy may possibly result, and put them on a preventive treatment, and I have seen harm where that treatment has been applied. In some cases the children have been kept back from school, and kept on a vegetable diet, no meat given them. I have seen one or two cases treated with that idea by specialists, having been treated with the bromide mixture a long time. I know one little girl who was treated by a specialist in Boston over ten years with bromides off and on, and never had but one convulsion, and I thought when I saw her that her mind was undoubtedly somewhat weakened, whether due to the bromides or possible nervous disease, I cannot say. She seemed to improve after the bromides were given up. It seems to me Dr. Walton's suggestion to disregard this preventive treatment awhile and try the result, is a thing well worth considering.

DR. WEBBER: I would like to ask Dr. Knapp whether Dr. Fernald stated how many of these idiots from convulsions had epileptic attacks.

DR. KNAPP: I don't remember that. I understood that in a part of them the idiocy began with convulsions. Many of the idiots were not epileptic. Of course there is a large percentage of epileptic idiots besides.

DR. WALTON: It is a very curious fact that out of seventy cases the five which had infantile convulsions did not have those severe convulsions which Dr. Webber associates with future epilepsy, but were merely spoken of as having ordinary infantile convulsions. It seems to me in Dr. Webber's remarks that he was perhaps a little inclined to consider organic brain disease with convulsions, as epilepsy. He speaks, for example, of unilateral lack of nutrition resulting. Now we know that in cases of hemiplegia resulting from hæmorrhage in infancy, or thrombosis of the veins emptying into the longitudinal sinus, we may expect convulsions. In that case it is an organic disease that produces the convulsions, and I should not class them under true epilepsy.

In regard to the connection between migraine and epilepsy, it is true that there is some analogy between them. The two diseases are both spasmodic, and both produced sometimes by similar causes. I am convinced, for example, that errors of refraction are the most common causes of migraine, and occasionally I think a case of epilepsy is relieved by putting on astigmatic glasses.

In regard to the importance of distinguishing true epilepsy from the convulsions resulting from organic disease, I think it is important to distinguish them as accurately as possible in order that our ideas may be accurate for just such investigations as the present one, which have a practical value. The exact pathology of epilepsy and migraine is less important for practical purposes than the question should a person who suffers from migraine be told he is in danger of having epilepsy. This is a vital question for all of us, just so in the case of these children with infantile convulsions: Are they liable to produce epilepsy later in life? It seems to me Dr. Williams has touched the practical side of the question in asking if a child should be put on preventive treatment (bromides) because he has had a convulsion.

Dr. Knapp says truly the experience of any one man is not enough to absolutely establish the facts, but it seems to me the results of our investigations have been printed enough to make us chary of accepting the traditional views, and I am very much in hopes, as Dr. Prince has suggested, that collective investigations may be made on this point. When Dr. Knapp speaks of the sinister significance of convulsions, he alludes to the small percentage of children who have infantile convulsions. I have been surprised, on the other hand, at the *large* percentage in our investigations, about one in ten, certainly not as many as regurgitate their food in infancy, but sufficient to make the process seem rather analogous.

We have endeavored to remove from the statistics all cases where I could find any organic disease, any fever, or anything of that sort in the general condition, and have tried to consider only those convulsions that were so-called infantile convulsions, pure and simple.

DR. F. C. SHATTUCK reported

A CASE OF GRAVES DISEASE WITH ACUTE PERICARDITIS, PARACENTESIS OF THE PERICARDIUM. RECOVERY.[1]

DR. MASON: I should like to ask Dr. Shattuck if

[1] See page 491 of the Journal.

other cases have come to his observation where the pericardium had been tapped successfully.

Dr. Shattuck: I think one, and there we wanted to go in on the right side, but there was pneumonia, solidification of the lower portion of the right lung, so that we could not. I have seen one other case where tapping was not practised, but thought of. There was a complication of a similar kind in that case.

Dr. Mason: Since Dr. Rotch's monograph was published the physicians at the City Hospital have been looking out for cases in which that method might be applied, tapping in one of the right spaces, fourth or fifth. No such case has yet been found, I think: and indeed I am not aware of any case of tapping of the pericardium which has been practised. I have never seen it done myself with the exception of one case of doubtful diagnosis, in which I tapped the left side of the chest in the mid-axillary line. It appeared at the post-mortem that the pericardium had been punctured. The puncture, however, did not produce any special result on the progress of the case. The patient died of fibroid phthisis with pericardial effusion which was not diagnosticated with certainty. In that case the puncture did no harm and no good, and was mainly accidental; so that I have no experience in the matter at all. It must be a rare condition that involves the necessity of puncturing the pericardium. The cases of hydropericardium from Bright's disease probably occur so late that it would not be of much service.

Dr. Williams: I once punctured the pericardium in Bright's disease in a moribund patient, and got quite a quantity of fluid, but it did no good and I hope it did no harm. I punctured in the left side. I argued that if you punctured the right side that quite a quantity of fluid of the pericardium would retreat before the trochar, and you would not get so much fluid as on the left side.

Dr. Knight: I never have seen a case where I felt any operation was demanded. I have never seen the operation done.

Dr. Shattuck: I recall a case tapped by Dr. Tarbell. The diagnosis was made of probable purulent pericarditis. It was in a case of phthisis. The man's lungs were riddled. Dr. Tarbell tapped on the left side and got plenty of pus.

Dr. Knight: I think that point of tapping on the right side being likely to be followed by retraction of the pericardium, is a very good one. I do not see why that is not a very proper objection to make to it.

Dr. Shattuck: I did not go in in Rotch's spot at first, because I did not want to run any risks, and I thought I stood the best chance on the left side. When tapping on the left side was so unproductive, I then tapped on the other side, and it was practically Rotch's spot which was selected. If the effusion is large the fourth space is underlain by the liquid as well as the fifth.

Political Accidents in Ireland. — During the campaign enthusiasm in Cork last week among the Parnellites and McCartyites there were ninety-two surgical cases admitted to the wards of the hospital, besides a much larger number of minor injuries treated in the out-patient department. The principal causes of the accidents were brick-bats, stones and blackthorn sticks.

AMERICAN ORTHOPEDIC ASSOCIATION.

(Concluded from No. 18, page 472.)

The Fifth Annual Meeting of the American Orthopedic Association was held at the Arlington Hotel, September 22–25, 1891. Dr. A. B. Judson, President; Dr. John Ridlon, Secretary.

THIRD DAY.

MALIGNANT DISEASE OF THE VERTEBRÆ.

The President, Dr. Judson, reported three cases, simulating Pott's disease so closely that the wrong diagnosis had been made in all but one of them. The patients were four-and-a-half, thirty-five, and forty-two years of age respectively. The chief points for differential diagnosis are: (1) deformity present in Pott's disease, absent in malignant disease; (2) local disability; (3) local pain, both absent in caries and present in malignancy.

Dr. Willard, Dr. Gibney, and Mr. Howard Marsh all spoke of malignant cases.

THE PROGNOSIS IN POTT'S DISEASE.

Dr. Ketch, of New York, had learned from seventy-five cured cases, that in length of treatment and degree of deformity, the upper region of the spine is most favorable, and the middle least of all, that paraplegia more frequently accompanies disease in the upper than in the lower region, and that cases of traumatic recover sooner than those of tubercular origin. Sudden deaths will sometimes occur from interference with respiration.

Dr. Hadra, of Galveston, Texas, proposed

THE TREATMENT OF POTT'S DISEASE BY WIRING THE SPINOUS PROCESSES.

He had successfully tried this procedure on a case of broken back, and was anxious to use it for caries of the spine. His method consists in laying the processes bare and winding several turns of silver wire around them, to immobilize them and prevent trauma from friction. The patient should be kept in bed for a short period of weeks, after which he can go about with a support.

THE OPERATIVE TREATMENT OF SPINAL CARIES,

by Dr. DeForrest Willard, of Philadelphia.

He divides the indications for operating into three classes: (1) to evacuate pus; (2) for the removal of dead bone; and (3) to relieve paraplegia. In speaking of the evacuation of pus, he said that the old fear of sepsis had been removed by the aseptic surgery of to-day. The situations of abscesses vary, and consequently our treatment must; aspirating is of use chiefly for diagnosis, the unusual cases of cure being cases of liquefied caseous material in a tolerably pure state. He injects an emulsion of iodoform into the cavity after aspirating; great care must be used not to needlessly lacerate the lining wall of the abscess. A free incision is preferable, and the evacuation should be thorough so as to be rid of all the pus; afterwards, the incision may be sewed up tight, leaving twenty to sixty grains of iodoform in the cavity. When within easy reach of the knife, it is well to dissect out all the abscess wall, or get rid of it by curetting, using for this purpose an irrigating nozzle with a sharp spoon attached. He has used hydric peroxide with success in some spinal abscesses.

In regard to operations for the removal of dead bone, with our present limited knowledge it must be regarded as unfeasible, except for a few selected cases of caries of the processes and arches of the vertebræ. In these the advantage of dependent drainage is also secured, and the removal of the dead bone shortens the period of suppuration.

Operating to relieve paraplegia should be considered unjustifiable in most cases, because the condition is a true pressure-paralysis from inflammatory or caseous deposits in the tissues surrounding the cord, and as these deposits undergo absorption the patient recovers the use of his limbs; hence laminectomy to relieve paralytic symptoms is restricted to a very few cases. In performing the operation it is better to divide the first lamina with a small Hay's saw, after which the others may be easily detached with bone-cutting forceps. Laminectomy is best done in the upper dorsal region; in the lumbar operation the incision is necessarily very deep, and it is hard to secure a dry wound.

DR. KETCH referred to the careless way in which some cases were reported as cured of spondylitis, when in reality all that the writer meant was that the abscess had closed. He is anxious to have some more positive indications and contra-indications for doing laminectomy.

MR. HOWARD MARSH, of London, made some remarks on

PARALYSIS IN POTT'S DISEASE.

After alluding to the occurrence of this symptom, most commonly in dorsal caries, he said that it might be due to: (1) abscess within the spinal canal; (2) softening of the spinal marrow; (3) pressure of the arches on the cord at the kyphosis, and (4) to inflammatory products and thickening of the spinal meninges. Of these, abscess is very rare, and it would be usually impossible to make a diagnosis of it, while the last-mentioned cause was certainly present in almost all cases. He, however, thought that a laminectomy done simply for exploration was only justifiable in some few instances: that, if a child with spinal caries had paralysis, it was not at all unusual for it to have recurrent attacks; but that permanent paraplegia resulting from this cause was rare: and he concluded by referring to a boy with spondylitis and paralysis of both arms and legs, who recovered the use of his limbs after laminectomy had been advised but not performed; and from this patient he had learned not to operate unless he had well tested that the condition would not improve under milder measures.

DR. W. N. BULLARD, of Boston, read a paper on

SPASTIC PARALYSIS IN CHILDREN,

written jointly by DR. C. L. SCUDDER and himself. After briefly defining the condition as one of cerebral origin, Dr. Scudder called attention to the uselessness of attempting to treat these cases by drugs, forcible correction under anæsthesia, and mechanical appliances; while, so far as he is aware, uniform success has attended all the cases on which a tenotomy or a myotomy has been performed. He reports one case complicated by hydrocephalus, spina bifida, and lateral curvature of the spine, which illustrates the good effect of open division of all shortened tissues, fasciæ, tendons and muscles (the latter divided close to their tendinous insertions).

Dr. Bullard, in his portion of the paper, tells us that in anterior poliomyelitis there are frequently muscular "contractures," that is, simple permanent shortening of a set of muscles whose opponents are paralyzed; while in true spinal spastic-paralysis due to degeneration of the lateral columns of the cord (and generally to a transverse myelitis as well), there is more paresis associated with the spastic rigidity than in those cases which are of cerebral origin (commonly due to intracranial hæmorrhages), which class alone includes about all the spastic paralyses seen in children. The question of the possible causative agency of the spina bifida in the case reported by Dr. Scudder is interesting; it is certainly very rare to find the spastic condition associated with this deformity, while on the other hand true paralyses frequently occur. If the spina bifida be disregarded, the spastic condition is probably due to the hydrocephalus, although it is said to occur less frequently in the idiopathic variety, which was present in this case, than in other forms of the affection. Dr. Bullard has the notes of another case in which these two conditions were associated; the spastic symptoms did not appear until the child was nine years old.

DR. BARTOW, of Buffalo, read a paper on

THE TREATMENT OF POTT'S DISEASE, WITH SPECIAL REFERENCE TO THE EARLY STAGE.

The early treatment should attempt to stay the spread of the process by giving rest to the affected parts. Delays are dangerous, and it is sometimes very hard to make an early diagnosis because the practitioner is looking for symptoms which should appear later on. Muscular fixation of the spine is at first apparent only when certain positions are assumed, or at certain times of the day.

Lateral distortion is the expression of ostitic pain and tenderness; there is a reflex spasm of the dorsal muscles of one side, and frequently a distinct lateral curvature. For the treatment of early cases immobilization is to be aimed at by several different methods; in cases below the fifth or sixth dorsal vertebræ by recumbency or the plaster jacket; the former is often inefficient among the poor on account of their unwillingness to confine the child's movements, and Dr. Bartow applies a plaster jacket in such cases more often than he used to do. It also corrects the lateral distortion. He often uses a leather jacket made from a plaster jacket cast; these should always be removed and applied with the child recumbent; they must be watched to see if they fit, and should be worn at least one or two years, leaving the support off gradually.

MR. HOWARD MARSH, of London, read a paper on

POTT'S DISEASE IN MIDDLE AND ADVANCED LIFE.

He began by a few remarks on the relative frequency of surgical tuberculoses at different ages. By far the greatest number of spinal cases fall between the ages of three and ten; but he knew of a few cases in infants under one year, and two cases under eight months. It is relatively infrequent between thirty and sixty, although he had noticed its occurrence in three pregnant women aged thirty-two, thirty-eight and forty, and in two unmarried women, one forty-two, the other forty-eight; and also in an unmarried man of forty-two. He quotes from "Studies from Old Case-Books," by Sir James Paget, referring to what he calls "Old People's Struma," that is, surgical tuberculoses occurring after sixty; and mentions a number of cases in the hand, foot, knee and hip, in patients of this age. Pott's disease is, however, rather uncom-

mon among the old people, and he only knows of four undoubted cases: First, seen by him in consultation at St. Bartholomew's Hospital; second, seen in private practice; third, a case recorded in Sir James Paget's work previously referred to, and fourth, a pathological specimen in the Museum of the Royal College of Surgeons.

Dr. L. A. Weigel, of Rochester, delivered a paper on

CERVICAL SPONDYLITIS.

He reports an interesting case of this affection, complicated by prolonged paralysis and a deep cervical and retro-pharyngeal abscess, and calls attention to the fact that in this case extension by weights in bed had immediately made the patient comfortable, and had speedily relieved the paralytic symptoms which recumbency alone had failed to benefit. Although paralysis and abscess are commonly developed in cervical cases, it is unusual to find them occurring together in the same patient, and it is an interesting question whether the abscess would have occurred if traction had not been employed.

After a half-hour's recess, the Section listened to

RECUMBENCY IN POTT'S DISEASE,

by Dr. Ap Morgan Vance, of Louisville.

Dr. Vance called attention to the good obtained by temporary recumbency. Surgeons often overlook this, but benefit is frequently seen where mechanical treatment has failed to relieve the symptoms, or when the circumstances prevent the proper application of protective apparatus. The usual objections are made on the plea that the general health will suffer, but he has yet to see bad results from it. The children usually improve in this respect, particularly with attention to proper feeding and with massage to the extremities, when this has been necessary on account of paralysis or other intercurrent disease. There is often rapid improvement of the bone lesion. He believes that the turning point in the disease often followed this temporary recumbency.

Dr. Charles C. Foster, of Cambridge, then read a paper on

EXTENSION IN BED.

After alluding to the necessity for rest and for avoiding traumatic influences affecting the diseased vertebræ, he speaks at some length of the injury done by forcible and violent movements recklessly inflicted by ignorant friends or by a quack, with the view of "curing a stiff neck or a stiff back," and illustrates his remarks by the exhibition of a pathological specimen from the Warren Museum, and the report of a case of a boy who had been under his care at the Cambridge Hospital. In both instances the neck had been twisted to remove the stiffness, and trouble had followed.

In regard to the method of applying extension, the child is first secured on his back in bed on a frame, and weights are attached by means of cords running over pulleys to a waist-belt or a chest-belt, while another weight is connected by means of a cord and pulley at the head of the bed to a "hat-band extension strap" similar to the one used by Dr. Sayre. To obtain good results this treatment should be begun early in the course of the disease, and should be persevered in for a long time.

Dr. Foster has found the following method of palpation of the spine of service in locating the seat of the carious process before a kyposis appears. The child lies on its face, and the physician places the the thumb of one hand firmly on the spinous process of a vertebra, while the tip of the index-finger resting lightly over the next spine notes any movement between the two which he may impart with his other hand; this process is repeated all the way down the back, and the amount of motion between each pair of vertebræ may be determined with tolerable accuracy after some practice. Disease of one vertebra may affect only one or both intervertebral joints; in the earliest stage the mobility is increased, later it is much diminished by the inflammatory infiltration of the joint and surrounding tissues, and is finally lost when anchylosis takes place. The value of the treatment by prolonged extension and recumbency depends largely upon constant medical care and good nursing; and if these cannot be had, it is wise to resort to another method.

Dr. Reginald H. Sayre, of New York, then followed with a paper on

TRACTION AND FIXATION IN POTT'S DISEASE.

He said, briefly, that all that rational treatment in spinal caries could expect to do was to avoid traumatism from movements of the spine, from the crushing weight of the superposed parts of the body, and from the reflex spasm of the muscles. That traction relieves pain in all joint-disease is well illustrated by the ordinary effect of the application of a jury-mast, namely, that it very quickly stops the pain. Dr. Sayre believes that for most spinal cases all indications are fulfilled by the continued use of the plaster jacket properly applied and watched. If paraplegic symptoms come on, they should be treated by traction, and operative interference should be restricted to a very few cases.

THE COMPARATIVE VALUE OF PRESENT MODES OF TREATMENT OF CARIES OF THE SPINE,

by Dr. E. H. Bradford, of Boston.

The treatment of caries of the spine necessarily must be based on the pathological conditions, and as these vary the treatment must necessarily vary. The methods should also be adapted to the portion of the spinal column affected, for caries of the spine differs somewhat in its course in different portions of the spinal column.

The methods of treatment may be grouped as follows: treatment by recumbency, treatment by mechanical appliances, and treatment by plaster bandages and corsets.

Of the treatment by recumbency, it may be said that it is of great value in the acute stages, and is indicated wherever the patients find great disability in going about, and are disinclined to walk or run, and are more contented when lying or sitting down. Recumbency should, however, be thorough; the patient should be kept upon the back, with proper arrangements of pads, so that sloughing should be prevented; and the patient should be fixed by means of a frame or straps, so that no sitting up or turning in bed should be possible. It should also be arranged so that the patient can be carried about freely, so as to be given the benefit of fresh air. Traction by weight and pulley, applied to the limbs or to the neck, is sometimes of great assistance. The necessary limits to the benefit

to be derived from recumbency are determined by the patient's general condition. It is manifestly impossible that the patient should remain in the recumbent state until the cicatrization has taken place, as this process involves years. For this reason the treatment by recumbency is only the treatment of a stage. Where patients begin to appear apathetic, listless; where general nutrition seems to fail after they have been kept recumbent for a long time, this treatment should be discontinued. Recumbency, by which is meant fixation, will be found to be the most efficient way of preventing increase of the curvature.

Mechanical appliances are an essential part of the treatment of caries of the spine; for whether recumbency is used or not, at some stage some form of mechanical appliances, either a corset or a brace, must be used in order to enable the patient to go about without danger to his back.

The form of mechanical appliance will necessarily vary according to the region of the spine affected; but a mechanical appliance based upon the principle of the antero-posterior supports is what the writer has found most serviceable. Where head-supports are necessary, the writer uses both the jury-mast, the wire chin-support, the Thomas collar, or the Taylor oval ring; the latter being, on the whole, preferred in a majority of cases where care can be given in adjusting it. The jury-mast is equally efficient, but has the disadvantage of unslightliness.

Treatment by mechanical appliances has the disadvantage of requiring skill and experience on the part of the surgeon, and attention on the part of the parents. It can, however (given these conditions), furnish the most efficient of means of treatment with portable apparatus; and patients can be thoroughly treated in this way, in many instances, without recumbency at all.

The value of plaster jackets is very great, and for the ordinary treatment of hospital cases, where great care cannot be given by the parents, the plaster jacket alone may be considered the most ready means of treatment. The writer, however, thinks that plaster jackets require skill and care to apply them properly, and they have the disadvantage of uncleanliness and discomfort. The split corset, leather corset, wood corset, or cloth corset stiffened by wire, is of value in the stage of convalescence, the latter being of the least value; but in the acute stages the permanent corset is preferable.

In conclusion, it may be said that caries of the spine is the most curable of affections, but requires treatment for a long time to insure a perfect cure, the disease running its course in from three to five years. In its treatment recumbency, mechanical appliances, and the use of corsets (including plaster jacket) are all of value, and may be needed severally in the treatment of any case.

FOURTH DAY.

DR. GIBNEY, of New York, read

A FURTHER CONTRIBUTION TO THE TYPHOID SPINE,

reporting the details of another case of this unusual affection in a man now forty-five years old, who, unlike the cases previously reported by the writer, exhibits a marked deformity in the cervical region dating back to typhoid fever at the age of twenty-two. Two years of pain and disability had immediately succeeded the typhoid attack.

DR. B. E. HADRA asked if the backache so constantly seen in the course of the fever was in any way due to this affection, and alluded to an epidemic of typhoid characterized by great pain and tenderness over the vertebræ.

DR. R. H. SAYRE suggested that the condition Dr. Gibney described might be analogous to the arthritis of typhoid in other joints.

DR. BENJAMIN LEE, of Philadelphia, gave in a few words

A BRIEF HISTORY OF THE USE OF SUSPENSION IN POTT'S DISEASE.

After referring to the very mixed state of our knowledge of scoliosis and spondylitis thirty years ago, and the frequency with which they were confounded with each other, he said that he had applied suspension to a case of Pott's disease as early as 1865, and in the following year had exhibited his apparatus (a jury-mast attached to a chair) for which he had obtained a prize. Dr. Lee claims to be the originator of self-suspension in the treatment of lateral curvature and also for the purpose of correcting the lateral deformity of spinal caries. The remainder of the paper is devoted to ancient machines for suspension, and is interesting from a historical point of view.

THE TREATMENT OF CONGENITAL DISLOCATION OF THE HIP,

by DR. E. H. BRADFORD, of Boston.

Dr. Bradford showed photographs of appliances for the treatment of a case of double congenital dislocation of the hip-joint, which for the last three years has been treated according to the method of Dr. Buckminster Brown. The modifications from Brown's method were such as to allow the patient to be carried about, though not allowed to stand. At the present time the patient is allowed to walk about, wearing protective appliances such as are used in convalescent stage of hip disease by Dr. Taylor. These appliances are made of aluminum, and for this reason are light. The result so far has been that the trochanter has been brought down from its position upon the ilium three quarters of an inch, and has remained in this position. The patient is beginning to walk about. There is at present some lordosis, but the lateral gait has entirely disappeared. Treatment so far has been indicative that success could be attained by this method, if care is given as in the case reported by Dr. Brown.

DR. NEWTON M. SHAFFER, of New York, read a paper entitled,

ELONGATION OF THE LIGAMENTUM PATELLÆ AS A FACTOR IN THE PRODUCTION OF CERTAIN KNEE-TROUBLES AND DIFFICULTIES IN LOCOMOTION,

giving the details of six cases.

The average length of this ligament in the adult was a little less than three inches, although anatomists appear to vary a good deal in their measurements. Dr. Shaffer measures from the summit of the tubercle of the tibia to the lower border of the patella with the knee flexed at a right angle. The symptoms of these patients varied from a simple weakness which prevented playing lawn-tennis, but gave no trouble in any other way, to a permanent, irreducible, outward dislocation of the patella together with a growth of osteophytes in the intercondyloid notch, and this causing so much disability and atrophy of the muscles that

the case had been treated for one of "paralysis." As to treatment in the milder forms, Dr. Shaffer had applied a pad to prevent outward displacement of the knee-cap and some apparatus to slightly restrict the motion of the joint; in the severer ones fixation was tried, and an operation advised to shorten the ligament (it had not been performed in any of these cases). Where there was a large mass of osteophytes in the intercondyloid notch, it was useless to attempt to reduce the displaced patella unless these were first removed.

In discussing the paper, Dr. Vance said that he thought joint fixation was indicated in the hope that nature would shorten the ligament just as it sometimes did in a flail-like joint, if a good splint was perseveringly worn.

Dr. Gibney said that he had tried this method unavailingly in one case at least, and that he was now trying to effect a shortening by injecting alcohol into the ligament in order to set up a sub-acute inflammation.

Dr. Beely asked if these patients could voluntarily dislocate their patellæ.

Dr. Shaffer said they could not; that the lengthened ligament allowed some rotation and a little lateral motion in the knee.

Dr. Wm. E. Wirt, of Cleveland, exhibited

A NEW APPLIANCE FOR OBTAINING EXTENSION,

in which the to-and-fro motion of a lever is changed into a rectilinear lengthening of the splint without any key or screw-driver.

Dr. Sayre said that the device gave accurate and easy adjustment in the direction of traction, and would probably work very well on hip splints; the only drawback to its use was that you could not diminish the amount of pull gradually, and he hoped that it might be modified so as to overcome this mechanical defect.

Dr. Royal Whitman, of New York, made some

OBSERVATIONS ON TORTICOLLIS, WITH PARTICULAR REFERENCE TO THE SIGNIFICANCE OF THE SO-CALLED HÆMATOMA OF THE STERNO-MASTOID MUSCLE.

In order to investigate the influence of this affection as a factor in producing torticollis, the writer had searched the record-books of the Hospital for Ruptured and Crippled in New York, and of eighteen cases of hæmatoma there recorded he was able to ascertain the present condition of nine, none of whom had wry-neck. Another observer had similarly investigated six other cases, making a total of thirteen, all with the same negative result; hence he infers that the lesion is a possible, but certainly an unusual cause of this deformity. On the other hand, a perusal of the histories obtained from 264 patients treated at the same hospital for torticollis, shows that the mother's statement is frequently insufficient to decide whether the case was congenital or acquired. The fact remains that many cases of congenital wry-neck are still of cause unknown, although the writer believes that most of them are of intra-uterine origin — arrest of development of a muscle, etc. An analysis of all the 264 cases shows that the deformity is rather more common in girls, and that the two sides of the neck are equally liable to be affected. In more than one-half of the patients it was due to cervical adenitis, or some painful condition of the neck. Early cases should be treated mechanically to secure rest and prevent deformity, and symptomatically to relieve the adenitis, etc.; later, free and complete division of all contracted parts should be done by open section, and the after-treatment should be carefully looked to.

In discussing the paper, Dr. Hoffa, of Würzburg, said that, in order to be sure that the deformity was of fœtal origin, we should know that the accoucheur had found that the baby not only had wry-neck, but that it also exhibited an asymetry of the face and head. He believes this asymetry to be of greater diagnostic value than the position of the head, because, if present, it is fair to assume that the deformity has existed for some length of time. Hæmatoma of the sterno-mastoid is caused during childbirth by excessive forced flexion of the head, the chin impinging on the muscle and injuring it, and probably damaging branches of the spinal accessory nerve at the same time.

Dr. Hadra, of Galveston, said that he had removed by open section from two children, one of whom was six weeks old, masses of fibrous tissue in the bellies of the affected sterno-mastoids, which under the microscope proved to be composed of very dense cicatrical tissue, so that they must have been there before birth; he regarded it as the scar resulting from a intrauterine rupture of the muscle. This is a rare cause of torticollis.

Dr. Shaffer said that perhaps two-thirds of all cases were congenital; most of them due to arrested development, as was shown in a patient where he had measured the sterno-mastoid at the age of six, and again at sixteen, and there had been no growth.

Dr. Ryan, of Cincinnati, reading on

RHEUMATIC SPONDYLITIS,

commented on the scarcity of articles relating to this affection in English and American medical journals, and hoped that the reports of more cases would be published. French writers regard it as a form of gonorrhœal rheumatism. The symptoms are very like the early stage of Pott's disease, but the kyphosis, when it appears, is like the stooping of old age. The gait is peculiar, as if carrying a heavy burden on the back. The prognosis is not good for recovering a supple spine, and most cases suffer considerable pain for many months. It should not be confounded with rheumatoid arthritis of the spine. The treatment should first be directed to relieve pain by a support, cautery, and medication; later, mobility should be aimed at by passive motion and suspension. Dr. Ryan reports one case.

Dr. Ketch thinks a well-fitting brace necessary, on the ground that reflex rigidity is nature's call for a splint.

Dr. Hoadley called attention to the fact that several different affections are classed under the head of rheumatism.

Drs. Vance, Bartow, and Gillette had all seen similar cases, and Dr. Lee spoke of the gouty spine, an infrequent affection resembling the rheumatic form.

Dr. Gibney attempted to give

THE DEFINITION AND SCOPE OF ORTHOPEDIC SURGERY,

as follows: "Orthopedic surgery is that department of general surgery which includes the prevention, the mechanical treatment and the operative treatment of chronic or progressive deformities."

DR. SHAFFER defined it as "that department of general surgery which includes the prevention, the mechanical treatment, and the operative treatment of chronic or progressive deformities, for the proper treatment of which special forms of apparatus or special mechanical dressings are required."

DRS. WHITMAN, FOSTER, KETCH, RYAN, STEELE and SAYRE took part in the discussion.

MEANS OF RECORDING ROTATION IN LATERAL CURVATURE,

by DR. E. H. BRADFORD, of Boston.

Dr. Bradford showed photographs of the method of recording rotation in lateral curvature. After describing the different methods in use, he illustrated by photographs, a method by which the cases could be recorded rapidly and with simplicity.

MODIFICATIONS IN THE TREATMENT OF LATERAL CURVATURE.

Dr. Bradford also showed photographs of appliances to increase the flexibility of the spinal column in lateral curvature as a preliminary exercise to the use of plaster-of-Paris bandages or other corsets.

Both of these papers were much curtailed to give time for DR. F. BEELY, of Berlin, to read his article on the

PATHOLOGICAL ANATOMY OF LATERAL CURVATURE OF THE SPINE.

Dr. Beely said that the spinal column was essentially made up of an anterior column of vertebral bodies and a posterior one consisting of the arches; that the bodies connected by the compressed and elastic intervertebral discs, are always trying to expand and make the spine longer, while the stretched and elastic ligamenta sub-flava tend to shorten the posterior column, so that if the two halves were divided by a saw there would be almost six inches difference in length between them. This difference is greatest in the dorsal spine, less in the lumbar, and least of all in the cervical: only the lumbar spine is affected by the body weight in health. Changes in the form of healthy vertebræ occur from weight and from other causes slowly by changes in the ossification, not from rapid moulding like clay; where there is traction, other things being equal, the bone will grow, and conversely with pressure it will dwindle. Arguing on this principle, he showed, on models made of soft rubber, how the various deformities of the bones were produced, and why we should always find deformities of the same sort in definite parts of the altered column. Rotation, he thinks, is chiefly due to the different character of the anterior and posterior halves of the column; he also shows how certain deformities are produced in the transverse and spinous processes, which, together with rotation, bring about the broad and shallow paraspinous groove on the concave side of a dorsal curve, and the very narrow and deep groove on the convex one, while in lumbar curves the condition is reversed owing to the absence of ribs.

The following papers were read by title on the last two days of the meeting: "Pott's Disease in Adults," by Dr. A. J. Steele, of St. Louis; "The Prevention of Unnecessary Deformity in Pott's Disease," by Dr. Royal Whitman, of New York; "Extension in Pott's Disease," by Dr. C. E. McKenzie, of Toronto; "The Treatment of Pott's Disease," by Dr. V. P. Gibney, of New York; "The Relations of Lateral Curvature of the Spine to Flat-Foot," by Dr. Paul Redard, of Paris; "A Contribution to the Etiology of Lateral Spinal Curvature," by Dr. C. L. Scudder, of Boston; "Spastic and Infantile Paralyses," by Dr. DeForrest Willard, of Philadelphia; "The Operative Treatment of Spastic Paralysis," by Dr. L. A. Weigel, of Rochester; "Additional Notes on Sacro-Iliac Disease," by Dr. Benjamin Lee, of Philadelphia.

Recent Literature.

Diseases of the Digestive Organs in Infancy and Childhood. With Chapters on the Investigation of Disease; the Diet and General Management of Children, and Massage in Pædiatrics. By LOUIS STARR, M.D., late Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania; Physician to the Children's Hospital, Philadelphia; Consulting Pædiatrist to the Maternity Hospital, Philadelphia; etc. Second Edition, illustrated. Philadelphia: P. Blackiston, Son & Co. 1891.

This second edition of Dr. Starr's book is like the first, most attractive in appearance, and has been much improved by being cut down in size. Many changes have been made in the text to keep it abreast of the times; and, with few exceptions, mostly points already spoken of in the previous review, the author has presented to us a most readable and in the main reliable book. The old ideas regarding the action of alkalies and cereals on the albuminoids of milk are still accepted by the author, notwithstanding that the latest investigations have proved them to be of unreal value.

We are not ready to agree with the author that wet nurses should be discarded, but congratulate him on his success in bottle-feeding. We are glad to see that the analyses of Vernois and Becquerel have been replaced by others which are more nearly correct, and it would be well for advance in infant feeding if other writers would follow Dr. Starr's example.

Excellent and instructive chapters have been introduced on "The Second Dentition" and on "Massage."

It would seem as though the surgical treatment of chronic tubercular peritonitis by laparotomy should find a place in the last chapter of the book; but it is not even mentioned.

Studies in Pathological Anatomy. By FRANCIS DELAFIELD, M.D., LL.D. Vol. II, Part 4. Chronic Bright's Disease, Plates LXXIII—CXXXIII. Wm. Wood & Co.

This completes the record volume of these studies, and takes up the subject of chronic Bright's disease, the difficulties of which are fully realized by the author. He divides the kidneys included in this group under four heads, from a combination of the clinical features with the anatomical appearances. But he appreciates the difficulty of drawing hard and fast lines, and realizes that very different clinical pictures may be presented at different times in a case where the anatomical conditions must be the same or but very slightly different.

His division is into chronic congestion of the kidneys,

chronic degeneration, chronic diffuse nephritis, with or without exudation of serum into the tubules. Under these he thinks all the chronic cases can be classed, and gives examples from his private and hospital practice.

The illustrations are of the same general character as in the preceding numbers, and are of a high degree of excellence. They are clearer than those of the first part and show remarkably well the points which he intends to bring out.

As completed the work is certainly a remarkable one, and a monument to the zeal and perseverance of its author.

Practical Pathology and Morbid Histology. By Heneage Gibbes, M.D. Lea Brothers. 1891.

In the first part, on practical pathology, are given the various ways of hardening, staining and mounting specimens for microscopic examination. In the second, an account of the methods employed in the culture, separation, staining and inoculation of bacteria; while the part on morbid histology is devoted to a description of the appearances that are seen on microscopic examination in diseased tissues and organs. The chief value of the book is as a guide to a laboratory course, and for this it is well adapted as it bears the stamp of the author's experience in teaching and embodies the results of his own research. There is a great deal of real worth in this, especially the result of his experiments in staining with aniline colors, to which he has devoted much time and attention.

The closing chapter deals with practical photography, especially in connection with the microscope. We cannot agree with him, however, in thinking that the illustrations, which are reproductions of microphotographs, convey as good an idea of the picture seen through the microscope, as a faithfully executed drawing. For the camera can reproduce but one plane, and cannot give the impression of superimposed images that comes from the rapid use of the fine adjustment.

Ministering Women. The Story of the Royal National Pension Fund for Nurses. By George William Potter, M.D. (The author's profits on this book will be devoted to the Junius S. Morgan Benevolent Fund.) London: "The Hospital," Limited, 145 Strand, W. C., 1891. All rights reserved. Pages 131.

This is the history of the National Pension Fund for Nurses, as its second title denotes. The fund may be said to have had its origin in the misfortunes of a nurse of the Seaman's Hospital at Greenwich, who had a severe attack of typhoid fever after attending a typhoid patient. She became a permanent invalid in consequence, but the hospital authorities had no funds available for her continued support, and she had no resource but the work-house. Her case produced a deep impression upon Mr. Henry C. Burdett, who was at the time Secretary-Superintendent to the hospital and he determined to inaugurate some sort of a mutual assurance association which should provide a weekly sick benefit and a disability pension for trained nurses. He finally, after several years, and with the assistance of various philanthropic individuals, was enabled to see his pet scheme realized. The object of the history is to popularize and extend the benefits of the fund, and to increase its capital by donations and bequests. The history is interesting and the fund is worthy of imitation in other countries, but the obstacles in the way of success are evidently such as would make failure easy for most men.

Pocket Medical Dictionary, for the Use of Students of Medicine. By Charles Gatchell, M.D., Professor in the University of Michigan. Chicago: The Era Publishing Company. 1891.

This book contains ten thousand words, with a short definition of each. In no case is the meaning of a word described at length, which accounts for the possibility of including the large number of words in three hundred small pages. No attempt is made to go into the derivation of words, and where a word may be spelled in two ways, generally but one is given. In some cases the double vowel is retained, especially œ, and in others abandoned, especially e for æ. As a ready reference book for students or the practitioner it will be found useful, as it is compact and concise.

Progressive Exercises in Practical Chemistry. By Henry Leffmann, M.D., Ph.D., and William Beam, M.A. Illustrated. Philadelphia: P. Blakiston, Son & Co. 1890.

This book includes the methods of laboratory instruction in inorganic chemistry given in the Woman's Medical College and in the Pennsylvania College of Dental Surgery. It is good enough of its kind, and we find nothing in it to criticise. Books of this kind are unquestionably useful to the authors and their students; but we do not believe they are of any value outside the schools in which they originate.

A Guide to the Practical Examination of Urine. By James Tyson, M.D., Professor of Clinical Medicine in the University of Pennsylvania. Seventh Edition. Philadelphia: P. Blakiston, Son & Co. 1891.

This book is too well and favorably known to require any extended notice of this edition, which does not differ essentially from the one which preceded it. We believe the author would add somewhat to the value of his work by enlarging the chapter on diagnosis. Otherwise we have no suggestion or criticisms to make. The book is a reliable one, and should find a place in the library of every practitioner and student of medicine.

Practical Notes on Urinary Analysis. By William B. Canfield, A.M., M.D., Lecturer on Clinical Medicine, University of Maryland, etc. Detroit: George S. Davis. 1891.

This is an addition to an already too long list of small works on the urine, and is fair specimen of a class which is rapidly becoming larger. It is in some respects tolerably good; but there are two or three works in urinary analysis which are very much better, and we do not believe there is any demand for this one.

Post-Mortems: What to Look for, and How to Make them. Newth and Owen. Detroit, Michigan: Illustrated Medical Journal Comp.

A small compendium of information on pathological anatomy, intended, as the preface states, to serve as a "reminder to the busy practitioner."

It is little more than a catalogue of the changes found in the organs, with a short account of the method of performing an autopsy. It is not full enough to be of aid to any but a skilled pathologist, and he would have no need for such a look.

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PSEUDO-TUBERCULOSIS.

IMMEDIATELY after Villemin's announcement, somewhat more than twenty years ago, of the specificity of tubercle, experiments were made (by Lebert and Wyss, by Cohnheim and Fränkel) which seemed to overthrow Villemin's conclusion as to the essentially infectious nature of tubercle. Morbid productions closely resembling tubercle were engendered in certain tissues by the implantation of foreign materials (cayenne pepper, cantharides, lycopodium, oyster shells, bits of putrid muscle) and even by the injection of pus (Roger). These experimental pseudo-tuberculosis products were afterwards studied by H. Martin, and by Cohnheim and other of the physiologists who were first deceived by their striking similarity to true tubercle.

Martin describes three varieties: with cantharides there are produced nodules formed by embryonal cells; with lycopodium the lesion is characterized by giant cells surrounded by round elements, while capsicum gives rise to true follicles constituted by the three classic zones which are observed in tuberculosis. Histology was incapable of differentiating these diverse granulations, but experimentation solved the problem by showing the absence of infectious properties in the tubercles engendered by the foreign substances; when inoculated in animals they failed to produce any tuberculous lesions, while true tubercle is inoculable in series and transmissible indefinitely from one animal to another.

Pseudo-tubercle by animal parasites have also been noted — little, yellowish, pale granules in the centre of which were found microscopic strongyli, isolated or grouped in balls. These verminous tubercles have not as yet been seen in man, though frequently observed in the cat and in other animals. Koch has described a verminous pneumonia peculiar to the sheep, and due to the *pseudalius ovis pulmonalis*. These neoplasms are packed with round cells, and often contain one or more giant cells in their interior.

In 1883, after the announcement of Koch's discovery, and when the unity of tuberculosis seemed established, Malassez and Vignal described a kind of tuberculosis proceeding from another parasite. On inoculating a cutaneous tubercle, they brought about a disease which was transmissible in series, and seemed to be produced by masses of zoogloea. Later on, in continuing their researches, they saw these animals succumb to bacillary lesions. They conclude (and their conclusion is supported by other observers as Charrin and Roger) that there exists a tuberculosis without Koch's bacillus, characterized by the presence of micrococci and short rods grouped in zoogloeic masses, and that the latter play in the organism which they infect, the rôle of irritant foreign bodies; the resulting tuberculosis they call *zoogloeic tuberculosis*. The appearance of Koch's bacillus late in the series of inoculations, they regard as accidental, that is, the bacillus tuberculosis was accidentally introduced.

Lastly, certain vegetal productions of an organization relatively high may cause the development of granulations more or less like those of tuberculosis, as has been shown in the recent treatise of Roger.[1] Thus, Pflüg has described in the cow, a tuberculous disease produced by the *actinomycosis;* Nocard has shown that the disease improperly called *ox-farcy* is a pseudo-tuberculosis due to a parasite akin to *cladothrix*. Eppinger has observed in a man, granulations produced by a cladothrix, the *cladothrix asteroides;* the parasite has been cultivated, and its inoculotion has reproduced in animals a miliary tuberculosis.

Roger states that different varieties of *aspergillus*, and in particular the *aspergillus glaucus* and *fumigatus* may produce in animals, granulations with giant cells, in the centre of which is found the parasite, whose radiatory aspect resembles that of actinomycosis.

Chantemesse and Widal have observed in pigeons a miliary pseudo-tuberculosis which was due to the *aspergillus fumigatus*, and which they have been able to reproduce by inoculating cultures of this vegetal. In individuals who exercise the profession of pigeon-feeders there are often observed respiratory troubles which seem to be due to the same parasite, as is inferred from the presence of the aspergillus in their sputa. Potain has published a case of like kind, and thinks that the aspergillus was acquired from the raw grain which the pigeon stuffers were in the habit of moistening in their mouths before feeding the pigeons with it. The affection seems to have a more favorable course than true tuberculosis.

A STUDY OF THE TOXIC PRODUCTS IN THE URINE OF TYPHOID FEVER PATIENTS.

THE elimination by the urine of the toxic products during typhoid fever, under different forms of treatment, has been investigated by two hospital physicians of Lyons, Drs. Roque and Weill, and is the theme of a contribution to the September issue of the *Revue de Médecine*, where their methods and conclusions are detailed. Weary of the advocacy of different treatments by the repetition of statistics, these investiga-

[1] Traité de Médicine, t. i, p. 668.

tors sought, by a study of the toxic products in the urine, to bring a more scientific element to bear upon the solution of the problems at issue.

They first endeavored to establish the "urotoxic coefficient" of typhoid fever without treatment, then that of typhoid under the cold bath treatment, and that of typhoid under an antipyretic treatment with antipyrine. Without reproducing their methods of analyzing the toxic products in the urine, or the details of the results of their estimates, we pass at once to the summing up of their conclusions, which are to the following effect:

In typhoid fever left to itself, the toxic products of the bacillus and of the organism are eliminated in part during the course of the disease; the "urotoxic coefficient" is double that of the "normal coefficient"; but the elimination is incomplete during the disease, and is prolonged into the convalescence, during five or six weeks of which it persists after the cessation of the febrile process.

In typhoid fever treated by cold baths, the elimination of the toxic products is enormous during the progress of the disease, the "urotoxic coefficient" being five or six times greater than normal. This hypertoxicity, however, diminishes as the general symptoms abate and as the temperature declines, to such an extent that, with the arrival of apyrexia and the beginning of convalescence, the exaggerated elimination of toxics is finished and the coefficient becomes normal again.

In typhoid fever treated by antipyrine, the elimination of toxic products is diminished during the disease to such an extent that the coefficient falls even below the normal. But with the arrival of convalescence the discharge of toxics suddenly begins in large amounts and lasts from five to seven days.

By a subsequent study, of the same kind, of typhoid under treatment by naphthol, Teissier finds that this drug acts as an antiseptic and prevents the formation of toxics, either during the disease or the convalescence.

Roque and Weill conclude that the cold bath is an eliminative treatment, it is in no sense specific, does not check the production of toxics, but secures their expulsion as fast as produced. Antipyrine (and the same should be true of the other coal-tar products) is not an antiseptic, it does not prevent the formation of toxic substances but prevents their elimination by the urine.

According to the conclusions of these authors the ideal treatment of typhoid fever with our present resources should be by naphthol internally and by cold baths externally. If these conclusions are correct, the practice of this combined treatment should result in some surprisingly favorable "statistics."

The Empress Frederick has recently opened a small model hospital at Cronburg, in the Taunus. It is to be maintained entirely at her own expense.

MEDICAL NOTES.

New York Pasteur Institute. — Dr. Paul Gibier, Director of the New York Pasteur Institute, gives the following results of the preventive inoculations against hydrophobia performed at this Institute during the first six months of the second year of its existence, February 18, 1891, to August 18, 1891. During this time 415 persons having been bitten by dogs, cats and other animals, applied for treatment. These patients may be divided in two categories: (1) In the case of 345 of these persons it was demonstrated that the animals attacking them were not mad. Consequently, the patients were sent back after having had their wounds attended to during the proper length of time. (2) In 70 cases the anti-hydrophobic treatment was applied, hydrophobia of the animals inflicting bites having been evidenced clinically, or by inoculation at the laboratory, and in many cases by the death of some other persons or animals bitten by the same dogs. Indigents have been treated free of charge. One death only, by hydrophobia, out of the 255 cases treated at this Institute is recorded, that of Miram Adams, five years old, of South Framingham, Mass. She was badly bitten July 14th last, in nineteen places by a dog, recognized to be mad. Treated from July 15th to August 1st. Symptoms of hydrophobia appeared six days later (August 6th). Died August 9th. Three other persons (two, sisters of the patient, and a man) bitten by the same dog, and who received the same course of treatment, are now enjoying good health.

Sirupus.—The last German Pharmacopœia changed the spelling of the work *syrupus* to *sirupus*, thus putting an official stamp upon the latter spelling, which had been recommended or used previously by various writers.

The Emperor and Professor Helmholtz. — On the anniversary of the birthday of his father, Emperor William sent a congratulatory telegram to Professor von Helmholtz, at the same time conferring upon him the title "Wirklicher Geheimer Rath" and "Excellency." In the telegram the emperor says, "Your whole life has been given to the service of humanity, for whose benefit you have made a great number of glorious discoveries. Your mind, always directed to the purest and highest ideals, in its high flight left politics and party strife far behind. I and my people are proud to call so distinguished a man ours. I have chosen the birthday of my dearly-beloved and never-forgotten father for this mark of appreciation, knowing well how highly he valued you, and how devoted a friend and subject you were to him. May God long preserve your life for the good of Germany and the entire world." The sentence in which the emperor praises Helmholtz for having kept aloof from politics is being much commented on, and is certainly not without a meaning of its own, coming as it does just after the Virchow festivities, and considering the fact that no title was bestowed upon Virchow on the

occasion of his seventieth birthday, as had been expected by many of his friends.

NEW ENGLAND.

MASSACHUSETTS MEDICAL BENEVOLENT SOCIETY. — At the annual meeting held October 29th, the following officers were elected for the ensuing year: President, Dr. Henry W. Williams; Vice-President, Dr. R. M. Hodges; Treasurer, Dr. William L. Richardson; Secretary, Dr. Robert Amory; Trustees, Drs. D. W. Cheever, C. M. Green, C. H. Cook, G. E. Francis, R. C. Greenleaf, W. S. Bigelow, B. E. Cotting, Francis Minot, A. H. Johnson.

The treasurer reported that the invested funds of the Society now amount to about $32,000; and that the income of the Society's funds and the annual assessments of the members of the Society had been distributed among thirteen beneficiaries, either physicians or members of deceased physicians' families. Dr. Francis Minot, who has been treasurer of the Society since 1857, declined re-election.

MASSACHUSETTS CHARITABLE EYE AND EAR INFIRMARY. — At the annual meeting last week, the secretary reported that the whole number of new patients during the year was 16,504, of which number 11,926 were eye patients and 4,517 ear patients. The whole number of house patients was 864. Of these, 742 were eye patients and 122 ear patients. Clement K. Fay was elected to the Board of Managers, in place of Dr. C. G. Weld, and the other members of the Board were re-elected as follows: Augustus Lowell, Edward I. Browne, Roger Wolcott, Augustus Hemenway, Arthur Rotch, Charles P. Curtis, Nathaniel Thayer, Percival Lowell, Harcourt Amory, Dr. J. Collins Warren, and George P. Gardner. Augustus Hemenway was re-elected treasurer, and Edward I. Browne, secretary.

NEW YORK.

NEW YORK STATE MEDICAL ASSOCIATION. — The eighth annual meeting of the Association was held at Mott Memorial Hall, on October 28, 29 and 30. The address of the President, Dr. Stephen Smith, was on "The Art of Teaching Medicine," and in it he deprecated to some extent the methods at present in vogue. "Questioning," he said, "is the basis of true teaching, and in every line of teaching this is followed except in teaching medicine. Clinical lectures do not meet the requirements. Medicine has reached the rank of a practical science, and should be taught under the immediate supervision of a competent instructor; and as the student advances in knowledge he should be advanced until graduation. The teacher should not be a morose perceptor, but a friend and companion of the student." Dr. Abram Dubois, who died during the past summer, left his valuable medical library to the State Medical Association.

ST. JOHN'S GUILD. — The twenty-sixth annual meeting of the Directors of the Guild was held October 27th, and the President, Mr. Wm. H. Wiley, in his address stated that in the twenty-five years' existence of the Guild, 456,135 sick children and their mothers had been cared for on the floating hospital and at the seaside hospital on Staten Island.

ROYAL PENSION FUND FOR NURSES. — In the Chapel of St. Luke's Hospital, Mr. Henry C. Burdett, of London, recently explained the workings of the Royal National Pension Fund for Nurses, and a committee, among whose members are J. Pierpont Morgan, Cornelius Vanderbilt, and Dr. John S. Billings, of Washington, was appointed to devise a plan for organizing a similar fund in this country.

DEATH FROM HYDROPHOBIA AFTER PREVENTIVE INOCULATION. — Robert Morton, of Columbia, South Carolina, who was very severely bitten about the arms and hands by a rabid dog in August, and who was afterwards given a course of treatment at the New York Pasteur Institute, died of hydrophobia in October.

SMALL-POX ON THE CANADIAN BORDER. — The State Board of Health has notified all the health officers in the State along the Canadian border to exercise the utmost vigilance to prevent the spread of small-pox, as recent reports show that the disease is quite prevalent in Montreal and the province of Quebec. Up to the present time no cases has been reported in the State of New York.

Miscellany.

THE GEORGIA BILL TO PREVENT DRUNKENNESS AMONG PHYSICIANS.

THIS bill, which has recently been extensively commented upon, has been vetoed by the governor, who gives the following reasons:

"I regret very much not to be able to give my sanction to any measure that might be considered as a protection to any part of the people against the evil effects of intemperance. I am unable, however, to approve this bill, for the following reasons: The bill provides that no physician or prescription clerk shall be allowed to practice medicine or fill a prescription who may become drunk from the use of either intoxicating liquor or opiates, while he or they are offering his or their professional services to the public, or in actual service. So much of the act has my hearty concurrence, and had it made provision for preventing such persons from practising medicine and filling prescriptions of medicine, which might have been accomplished through the medium of requirements of registration to practice medicine or license to fill prescriptions or some other appropriate method, I should have promptly given it my approval. But this bill in the second section provides that for a violation of the first section, that is, a physician who may become drunk while offering his professional services to the public, or in actual service, or a prescription clerk in a drug establishment who may become drunk while offering his services to the public, or in actual service as such prescription clerk, shall be guilty of a misdemeanor, and, on conviction, be fined. In this policy of legislation I cannot concur. Drunkenness on the part of practising physicians and prescription clerks is reprehensible, and

ought to be suppressed; but if it is a crime for them to be intoxicated, it ought to be a crime for others who get in like condition; and if it is no crime for others, it ought not to be a crime for them. It is the fact of drunkenness that would be punished if this act were a law, and not the acts arising from that condition; and if drunkenness is the gravamen of the offense all persons should come under the same law. If not all, then none."

A FURTHER COMMUNICATION CONCERNING TUBERCULIN.

In a paper under this title Koch describes a method for separating a precipitate from tuberculin, which possesses the therapeutical properties of the cruder product, and which may, the author says, be the actual active principle.[1] After experimenting with several reagents he at last found that tuberculin containing sixty per cent. alcohol threw down a white flocculent precipitate, which could be washed and dried. This precipitate represents about one per cent. of the original tuberculin. Stronger solutions of alcohol throw down more, but at the same time bring down impurities which cannot be separated. As the therapeutic dose of the precipitate obtained by sixty per cent. alcohol is about one-fiftieth that of tuberculin, it may be considered as representing about one-half of the active principle of the crude product from which it was obtained.

The precipitate is moderately soluble in water, but deteriorates in aqueous solution, but in a fifty per cent. glycerine solution keeps perfectly well. Chemically, it shows all albumin reactions.

Both in animals and man the diagnostic and therapeutic action of the purified tuberculin is exactly the same as the original crude product, except that the dose, which for guinea-pigs is one-fiftieth, appears for man to be only one-fortieth. In conclusion, Koch says that although the purification of tuberculin has thrown no new light on its therapeutic value, he has not yet abandoned the study of its practical application.

At the end of his paper the author describes more in detail than he has formerly done, the process of preparing pure cultures of the tubercle bacillus, for the manufacture of tuberculin.

THE AREA AND POPULATION OF THE GLOBE.

The recent publication of the *Bevölkerung der Erde*, of Drs. Wagner and Supan, by Perthes, of Gotha, gives us the most reliable information as to the area and population of the earth now obtainable.[2] The estimate for the total population of the earth in this present year is 1,480 millions, or an increase of 46 millions over the estimate for 1882, when the last edition of these statistics was published. The exact enumeration of 836 millions (about 56 per cent. of the whole population of the globe) has now been accomplished by census or registration. The population of the chief divisions of the globe is, in round numbers: in Europe, 357 millions, giving 94 inhabitants to each square mile of area; Asia, 825 millions, or 47 to the square mile; Africa, 163 millions, or 14 to the mile; America, 121 millions, or 8 to the mile; Australia, 3 millions, or 1 to the mile; and in the Oceanic Islands, 7 millions, or 10 to the mile. In Europe, Belgium exceeds all other countries in density of population, with 530 persons to a square mile; next follows Holland, with 365; and the United Kingdom, with 312; but whereas in England the density is 480, in Scotland it is only about one-fourth, and in Ireland about one-third that of England. In Norway and Finland, the most thinly populated countries of Europe, there are only about 16 persons to the square mile. Of China the estimate is 361 millions, giving a density of about 77 to the square mile. It is in respect of Africa that the greatest doubt necessarily exists. The statistics make it manifest that there are still vast areas of the habitable surface of the earth almost, if not quite, unpeopled; and which will for many a long year to come receive the surplus millions of Europe and other parts of the globe in which the density of population is most keenly felt.

[1] Deutsche Medicinische Wochenschrift, October 22d.
[2] British Medical Journal, October 10th.

GONORRHŒA IN THE FEMALE.

Bumm[1] from a long study of this subject concludes that gonorrhœa in women is a process limited to the superficial layer of the mucosa; the cocci invade the epithelial layer, but are always arrested when they reach the submucosa. The epithelium is originally cast off by reason of the active suppuration, but is quickly renewed, assuming the pavement form; after this change has occurred the active invasion of gonococci is usually arrested, but they continue to grow in the secretion, in which they may persist for months and years. The gonococci have no connection with septic processes; they do indeed cause suppuration of the mucosa, but are destroyed when they reach the subjacent connective tissue. If sepsis develops it must be in consequence of mixed infection; septic germs are frequently present in gonorrhœal pus, and a favorable nidus for the reception of external germs is offered by the purulent genital secretion. The urethra and cervical canal are the favorite seats of gonorrhœal infection; acute gonorrhœa of the cervix gives rise to symptoms only at the outset, but after it has become chronic it may exist for years without causing disturbances, unless it extends to the corpus uteri and thence to the tubes.

The cocci possess no power of spontaneous movement and extend only short distances by proliferation Extension over larger surfaces must be through the agency of the secretion. Normally the cervical secretion cannot pass the os internum, which also serves as a barrier to the entrance of the specific infection. Menstruation favors the admission of cocci into the uterine cavity, also certain mechanical causes, such as coitus, the introduction of sounds and intra-uterine medication; lastly, this is liable to occur during the puerperium. After they have reached the cavity they again remain stationary, and probably are only carried into the tubes from the causes already mentioned, the puerperium being the most favorable time, as the proximal openings of the tubes are then more patent. In fifty-three patients with gonorrhœa, who were kept under observation for at least five months after the initial symptoms developed, the cervix was infected in 75 per cent., the corpus uteri in 15 per cent., and the tubes in only 3.5 per cent.

[1] Centralblatt für Gynäkologie, 1891, No. 22.

THE POISON OF THE TOAD.

IN two letters which appeared in the *Lancet* of August 29th, a large amount of evidence is brought forward to show that Shakespeare's description of a toad "sweating venom," instead of being an expression of a mistaken popular idea, is really a truthful description of fact.[1] The toad secretes a venom of a tolerably powerful character: and instead of this secretion taking place, as in the case of snakes, entirely through glands in the mouth it is secreted by the skin. In his interesting letter, Dr. Leonard Guthrie mentions that the secretion also occurs in the toad through the parotid glands, and that the venom is a thick milky fluid like the juice of dandelion stalks in taste and appearance. When inoculated subcutaneously it kills small birds in six minutes, and dogs and guinea-pigs in half an hour to an hour and a half; the symptoms in birds being loss of coördination followed by death, in guinea-pigs convulsions, and in the dog depression, vomiting, and intoxication. Dr. Guthrie kept a small toad in a cage with some common lizards, and one day a lizard, having bitten the toad, immediately afterwards rushed wildly round the cage, burrowing its head in the sand, became convulsed, and died in less than two minutes. His dog having seized a toad, was attacked by instantaneous and profuse salivation, violent vomiting, and collapse. He also noticed that the venom has a most powerful local action on the skin, so that after carrying a toad in his hand he got numbness and tingling in it, with slight swelling and dryness of the skin lasting for several hours. In another letter Dr. Lauder Brunton mentions that the active principle of the toad venom is probably of an alkaloidal nature. It has been called phrynin or bufidin. It appears to be a cardiac poison, acting in somewhat the same way as digitalis; but its effects appear to resemble still more those of erythrophlœum, for the uncertain gait, convulsions, and paralysis which it produces are precisely the symptoms produced by the erythrophlœum when used as an ordeal poison. Dr. Guthrie's observation of the local action of toad's venom in causing numbness and tingling is interesting, as showing that in its local anæsthetic action phrynin resembles erythrophlœum and digitalis, adds evidence to the generalization made by Dr. Lauder Brunton that all the drugs belonging to the group of so-called cardiac poisons may have a local anæsthetic action.

[1] Lancet, September 19th.

THE RESULTS OF VEGETARIAN DIET.

A RECENT number of the *Medical and Surgical Reporter* contains a translation of a letter by Dr. Alanus, giving his reasons for abandoning vegetarianism. He says.

"Having lived for a long time as a vegetarian without feeling any better or worse than formerly with mixed food, I made one day the disagreeable discovery that my arteries began to show signs of atheromatous degeneration. Particularly in the temporal and radial arteries this morbid process was unmistakable. Being still under forty, I could not interpret this symptom as a manifestation of old age, and being, furthermore, not addicted to drink, I was utterly unable to explain the matter. I turned it over and over in my mind without finding a solution of the enigma. I, however, found the explanation quite accidentally in a work of that excellent physician, Dr. E. Monin, of Paris. The following is the verbal translation of the passage in question: 'In order to continue the criticism of vegetarianism we must not ignore the work of the late lamented Gubler on the influence of a vegetable diet on the chalky degeneration of the arteries. Vegetable food, richer in mineral salts than that of animal origin, introduces more mineral salts into the blood. Raymond has observed numerous cases of atheroma in a monastery of vegetarian friars, amongst others that of the prior, a man scarcely thirty-two years old, whose arteries were already considerably indurated. The naval surgeon, Treille, has seen numerous cases of atheromatous degeneration in Bombay and Calcutta, where many people live exclusively on rice. A vegetable diet, therefore, ruins the blood-vessels and makes prematurely old, if it is true that man is as old as his arteries. It must produce at the same time tartar, the senile arch of the cornea, and phosphaturia.' Having unfortunately seen these newest results of medical investigation confirmed by my own case, I have, as a matter of course, returned to a mixed diet. I can no longer consider purely vegetable food as the normal diet of man, but only as a curative method, which is of the greatest service in various morbid states. Some patients may follow this diet for weeks and months, but it is not adapted for everybody's continued use. It is the same as with the starvation cure, which cures some patients, but is not fit to be used continually by the healthy. I have become richer by one experience, which has shown me that a single brutal fact can knock down the most beautiful theoretical structure."

THE DEPOPULATION OF FRANCE.[1]

THE discussions in the Academie de Médecine upon the causes and remedies for the stationary or diminishing character of the French population, as well as upon the leading questions of public sanitation, disease-prevention, and the loss of life due to the peculiar methods of infant farming, recently ended in the adoption of the following resolutions. This body rarely makes recommendations to the law-making power unsuccessfully, and it may be confidently expected that these measures will shortly take effect.

(1) That in each department there be established an asylum or refuge for the reception and care of women in the later months of pregnancy and in their accouchement. That, if so desired, absolute secrecy be observed. That there be an office to give succor and aid to persons unable to procure proper care for themselves and infants.

(2) That the law of December 23, 1874, for the protection of infants, be revised in some of its provisions, and notably that relating to "l'élevage mercenaire," in order that infants may not henceforth be left without the supervision and care of the parents.

(3) That vaccination and revaccination be made obligatory.

(4) As this law is of national importance (it has been recently adopted), the Academy recommends that vaccination and revaccination be encouraged and facilitated by all possible means at all times, and notably so when departments are advised of the appearance of

[1] C. A. Siegfried, in the Nation, October 15th.

indications of variola by the State Council of Hygiene, because, contrary to popular prejudice, vaccination and revaccination are the surest means of arresting the spread of small-pox and stamping it out of existence.

(5) That all school-children be vaccinated and revaccinated, as all soldiers and sailors are.

(6) That a vaccination service be organized throughout the country, without charge to the people, a day being fixed upon for the operation, which is to be performed as seems necessary.

(7) That small pox cases be isolated in all instances, in hospitals and elsewhere.

(8) That municipalities, prefects, and the powers that exist in communes be given sufficient authority by law to correct at once all insanitary conditions, and particularly to procure the supply of pure water without the admixture of sewage and surface contaminations.

The Academy has three times in the last ten years voted in favor of obligatory vaccination and revaccination. Many other public-health questions were under discussion, particularly measures looking to the prevention of typhoid and the commonly prevalent infectious diseases, the number of lives that could thus be saved annually aggregating, it is estimated, upwards of 150,000; but the above measures were the principal ones formulated and urgently pressed upon the attention of the French Parliament.

THERAPEUTIC NOTES.

The Effect of Salicylic Acid upon the Virile Power. — Corput [1] has noticed a diminution in the virile power of patients to whom he has given different antiseptics, such as quinine, menthol, carbolic acid, but especially salicylic acid. The spermatozoa lose their activity. Salicylic acid has a similar effect on the ovary, and prolongs the menstrual period.

New Method for the Production of Pure Chloroform.[2] — Dr. Raoul Pictet, who in the year 1877 converted oxygen and hydrogen into liquids by means of extreme cold and great pressure, has patented a new process invented by him, "for the purification of chloroform in cold." This process is based on the fact that on the reduction of temperature, the purest commercial chloroform at — 70° deposits a crystalline substance which is separated from the portion remaining liquid. The latter is then subjected to a temperature below — 100°, whereupon the chloroform itself separates in the form of crystals, and may be removed from the contaminating portion which remains liquid. The chloroform thus purified possesses at 15° a specific gravity of 1.51, and is not modified by the influence of daylight. By virtue of this purification, the chloroform becomes capable of indefinite storing without the addition of alcohol. On shaking with concentrated sulphuric acid, coloration of the latter does not occur, even after a considerable time. Solution of dichromate of potash and sulphuric acid, on shaking with this chloroform remains yellow, whilst heretofore the purest commercial brands of chloroform exercised a reducing action on the mixture — noticeable by the appearance of a greenish coloration. Hopes have been expressed by several operators that chloroform thus prepared will be safer as an anæsthetic than the less pure drug.

[1] Rev. de Thérap. Méd. et Chir.
[2] Bul. of Pharm., August.

Iodoform in Tuberculosis. — Flick regards its curative powers as being limited to those cases in which the circulation has not yet been cut off from the deposit.[3] It is dissolved in cod liver or olive oil, and is given by injection; the preparation should last for several weeks.

Antipyrin on the Secretion of Milk. — Ginbert [4] has found antipyrin of use in arresting the secretion of milk. It should not be given unless the kidneys are normal. He gives four grains every two hours, and generally obtains the desired result in two days.

Ergotin. — For subcutaneous use Biedert recommends the following solution.[5] The preparation keeps well, and is not irritating.

℞ Ergotin . . . . . gr. xv.
Aquæ destil . . . . . gr. lxxv.
Acidi carbolici . . . . . gr. ½. M.

For Eczema, not of a chronic nature.[6]

℞ Thymol . . . . . 2 grammes.
Oxide of zinc } . . . . ää 25 grammes.
Starch }
Lano-in . . . . . 50 grammes.

M. fiat unguentum. Sig., salve, to be applied to the affected parts.

Acetanilid in the Treatment of Acute and Chronic Bronchitis. — In an account of some original observations, Grün describes what he believes to the specific bacillus of acute bronchitis.[7] This bacillus is about twice as long as it is broad, and appears to give off spores. It stains with gentian violet and methyl blue, and occurs in the pus cells, free, and on the particles of epithelium. It can be grown on agar-agar and nutritive gelatine. The addition of iodoform, creasote and several other well-known antiseptics did not prevent its growth in the cultures. Acetanilid added to the cultures invariably prevented its growth. He then cites twenty-five cases of acute bronchitis and one of chronic bronchitis, in which the administration of five grains of acetanilid every other hour caused disappearance of all symptoms in about twenty-four hours. He asks a trial of the remedy in such cases.

[3] Univ. Med. Mag., August.
[4] Lyon Medical, August 9th.
[5] Deutsche med. Woch.
[6] Med. and Surg. Reporter.
[7] Univ. Med. Mag., from Lancet, June 27th.

METEOROLOGICAL RECORD,

For the week ending October 18, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	Weather. * 8.00 A. M.	Weather. * 8.00 P. M.	Rainfall in inches.
M..12	30.62	41	46	36	69	71	70	N.E.	N.W.	24	10	O.	O.	
T..13	30.26	47	52	43	74	96	85	N.E.	N.E.	20	26	O.	R.	.12
W. 14	29.89	51	61	40	100	82	91	N.W.	S.W.	12	12	O.	C.	1.40
T..15	29.91	59	63	53	91	91	91	S.	S.W.	12	7	O.	F.	0.02
F..16	30.08	51	59	43	73	74	74	W.	W.	10	12	C.	C.	
S..17	30.36	49	55	42	69	80	74	W.	S.E.	10	8	C.	C.	
S..18	30.32	48	54	42	83	75	79	N.W.	E.	4	9	O.	O.	

☞

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., raining; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, OCTOBER 17, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	747	336	18.98	12.31	9.49	1.56	4.94
Chicago	1,049,850	417	182	26.16	7.44	7.20	7.44	4.24
Philadelphia	1,046,964	398	150	25.25	15.50	5.50	2.00	15.50
Brooklyn	806,343	302	180	19.50	14.04	8.84	1.56	5.98
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	214	73	10.35	7.20	4.50	3.60	1.35
Baltimore	434,439	188	75	18.62	7.42	6.36	4.24	3.71
Cincinnati	296,908	97	37	20.60	4.12	9.27	4.12	4.12
Cleveland	262,000	65	45	29.26	3.08	6.16	3.08	20.02
New Orleans	242,039	—	—	—	—	—	—	—
Pittsburg	240,000	92	40	29.43	7.63	7.63	2.18	16.35
Milwaukee	240,000	—	—	—	—	—	—	—
Washington	230,392	112	36	24.03	13.35	3.56	6.23	8.90
Nashville	76,168	28	16	35.70	7.14	17.85	—	3.57
Charleston	65,165	28	11	21.42	1.71	—	17.85	—
Portland	36,425	12	4	25.00	16.66	25.00	—	—
Worcester	84,655	30	17	33.33	3.33	6.66	3.33	—
Lowell	77,696	34	18	14.70	11.76	8.82	2.94	—
Fall River	74,398	40	19	20.00	10.00	7.50	7.50	2.50
Cambridge	70,028	—	—	—	—	—	—	—
Lynn	55,727	10	6	50.00	—	10.00	—	30.00
Lawrence	44,654	17	6	23.52	5.88	5.88	5.88	11.76
Springfield	44,179	11	3	—	27.27	—	—	—
New Bedford	40,733	29	11	20.70	17.25	10.35	3.45	3.45
Salem	30,801	13	—	20.37	13.58	13.58	6.79	—
Chelsea	27,909	22	7	9.10	13.65	4.55	—	4.55
Haverhill	27,412	4	1	—	25.00	—	—	—
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	6	0	16.66	33.33	—	16.66	—
Gloucester	24,651	7	5	—	—	—	—	—
Newton	24,379	9	4	22.22	11.11	11.11	—	11.11
Malden	23,031	8	4	12.50	—	12.50	—	—
Fitchburg	22,037	10	6	40.00	—	30.00	—	—
Waltham	18,707	9	1	—	33.33	—	—	—
Pittsfield	17,281	4	0	25.00	—	—	25.00	—
Quincy	16,723	5	2	—	20.00	—	—	—
Newburyport	13,947	5	0	—	20.00	—	—	—
Medford	11,079	4	0	—	50.00	—	—	—
Hyde Park	10,193	4	1	25.00	—	25.00	—	—
Peabody	10,158	1	0	—	—	—	—	—

Deaths reported 3,072: under five years of age 1,296; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 603, consumption 333, acute lung diseases 257, diarrhœal diseases 241, diphtheria and croup 171, typhoid fever 103, whooping-cough 26, scarlet fever 23, cerebro-spinal meningitis 14, malarial fever 13, measles 10, erysipelas 2.

From whooping-cough Chicago 6, New York, Baltimore, Pittsburgh and Washington 3 each, Philadelphia and Nashville 2 each, Cincinnati, Charleston, Fall River and Fitchburg 1 each. From scarlet fever Chicago 11, New York 5, Philadelphia 7, Brooklyn and Baltimore 4 each, Cincinnati 2. From cerebro-spinal meningitis Chicago 4, Washington 3, Brooklyn 2, Boston, Worcester, Lynn and New Bedford 1 each. From malarial fever Brooklyn 6, New York 4, Nashville 2. From measles New York 10.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending October 10th, the death-rate was 18.4. Deaths reported 3,312: diarrhœa 239, whooping-cough 73, fever 54, measles 39, diphtheria 35, scarlet fever 25, small-pox (Birmingham) 4.

The death-rates ranged from 12.2 in Brighton to 25.8 in Sunderland, Birmingham 17.8, Bradford 15.9, Hull 21.3, Leeds 18.5, Leicester 15.4, Liverpool 23.0, London 17.2, Manchester 23.3, Newcastle-on-Tyne 24.2, Preston 23.7, Sheffield 16.5.

In Edinburgh 15.7, Glasgow 23.3, Dublin 23.0.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM OCTOBER 24, 1891, TO OCTOBER 31, 1891.

FIRST LIEUTENANT ROBERT R. BALL, assistant surgeon, U. S. A., granted leave of absence for one month, with permission to apply for an extension of one month.

CAPTAIN LOUIS M. MAUS, assistant surgeon, U. S A., relieved from duty at Whipple Barracks, Ariz., and ordered to Fort Apache, Ariz., for duty.

CAPTAIN CHARLES PICHARD, assistant surgeon, U. S. A., is relieved from duty at Fort Logan, Col., and will report in person to the commandant of the Military Prison, Fort Leavenworth, Kan., for duty.

CAPTAIN VICTOR BIART, assistant surgeon, U. S. A., having been found incapacitated for active service, on account of disability incident to the service, is, by direction of the President, retired from active service, to date October 21, 1891.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING OCTOBER 31, 1891.

HENRY P. HARVEY, surgeon, ordered to Receiving-ship "St. Louis."

JAMES M. FLINT, surgeon, detached from Smithsonian Institution, and to the U. S. S. "Miantonomah."

T. C. HEYL, surgeon, detached from Receiving-ship "St. Louis," and wait orders.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING OCTOBER 24, 1891.

PURVIANCE, GEORGE, surgeon. Upon completion of duties as chairman of Examining Board to inspect marine hospitals at St. Louis, Mo., Cairo, Ill., and Cincinnati, O. October 16, 1891.

GODFREY, JOHN, surgeon. To represent the Service at the meeting of the American Public Health Association. October 14, 1891. To inspect Marine Hospital at Louisville, Ky. October 14, 1891.

CARTER, H. R., passed assistant surgeon. Granted leave of absence for thirty days. October 17, 1891.

PETTUS, W. J., passed assistant surgeon. Orders to Norfolk, Va., revoked, to proceed to Cape Charles Quarantine for temporary duty. October 14, 1891.

KINYOUN, J. J., passed assistant surgeon. To represent the Service at the meeting of the American Public Health Association. October 17, 1891.

PERRY, T. B., passed assistant surgeon. To proceed to Norfolk, Va., for temporary duty. October 14, 1891.

GUITERAS, G. M., assistant surgeon. To proceed to Gulf Quarantine for duty. October 20, 1891.

ROSENAU, M. J., assistant surgeon. Granted leave of absence for thirty days. October 24, 1891.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held on Monday, November 9, 1891, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Drs. Philip C. Knapp and Abner Post, "Two Cases of Trephining for Traumatic Epilepsy." Dr. James J. Putnam, "The Nature and Causes of Traumatic Epilepsy, with Special Reference to Treatment."

G. G. SEARS, M.D., *Secretary*.

BOOKS AND PAMPHLETS RECEIVED.

Transactions of the United States Medical Practitioners' Protective Alliance. New York. 1891.

Mechanical Massage. By B. D. Eastman, M.D., Superintendent of State Insane Asylum, Topeka, Kan. 1891.

The Physicians Ready Reference Account Book. Arranged by Gideon C. Segur, M.D. Hartford, Conn.: The Plimpton Manufacturing Co.

Epidemic Influenza, Notes on its Origin and Method of Spread. By Richard Sisley, M.D., M.R.C.P., Lond. London and New York: Longmans, Green & Co. 1891.

Thirteen Cases of Sub-Periosteal Section of a Rib in Empyema, most of them being Acute, Occurring in Children. By Albert B. Strong, A.M., M.D. Reprint. 1891.

A Plea for the Extra-Peritoneal Treatment of the Stump in Abdominal Hysterectomy for Fibroids. By A. Lapthorn Smith, B.A., M.D., M.R.C.S., E., F.O.S.L. Reprint. 1891.

Annual Announcement, with List of Matriculates and Graduates for 1891, of the Hospital College of Medicine, Medical Department of the Central University of Kentucky. Session of 1892.

New and Improved Galvanic and Faradic Batteries, with New and Original Electrodes, in the Treatment of Narcotic Habitues. Chloralism. By J. B. Mattison, M.D., Medical Director, Brooklyn Home for Habitues. Reprints. 1891.

A Manual of Hypodermatic Medication. The Treatment of Diseases by the Subcutaneous Method. By Roberts Bartholow, A.M., M.D., LL.D., Emeritus Professor of Materia Medica, etc., Jefferson Medical College. Fifth edition. Philadelphia: J. P. Lippincott Company. 1891.

Original Articles.

CLINICAL ASPECTS AND ETIOLOGICAL RELATIONS OF CUTANEOUS TUBERCULOSIS.[1]

BY JAMES C. WHITE, M.D.,
Professor of Dermatology in Harvard University.

THERE is no disease within the special province of this Association which so much demands its earnest consideration as this, which has been selected for formal discussion to-day; for not only is tuberculosis of the vital tissues one of the most fatal and widespread destroyers of man, and in its cutaneous forms the source of frightful disfigurement, but great confusion exists with regard to the nature and mutual relations of some of its manifestations. The diversity of opinion which exists in the profession throughout the civilized world upon this point, has been made prominently manifest in the innumerable discussions and reports upon the action of Koch's remedy, which have been published during the past year. Such a universal and synchronous census of prevalent professional views upon any subject in medical pathology is unparallelled in history. If this cyclonic experimentation in therapeutics, fanned into a popular craze by the public press, and conducted to a lamentable and almost ridiculous end by the over-enthusiasm of its medical supporters, who in many instances knew as little of the external phases of the disease they were treating as they did of the remedy they were employing, shall result in no more immediate good than the creation of a proper interest in the study of the manifold manifestations of cutaneous tuberculosis, it will not have vexed the world in vain.

It is my function, as I interpret the instructions of the Council, to place the subject in its clinical and etiological relations before you in as simple a form as possible for discussion. Before this body it will be unnecessary more than briefly to indicate those well-recognized conditions of the skin, which have been hitherto assigned a more or less individual or independent position in cutaneous pathology among dermatologists, and which, with certain other less clearly defined conditions, it will be my object to show, areonly progressive phases or clinical forms of a single affection.

I. — LUPUS VULGARIS.

I may be pardoned if I attempt to define before you the meaning of this term, as ordinarily used, by the briefest sketch of the lesions which characterize its course. The vast and needless number of specific terms which have been invented to express each particular phase of development or involution and every clinical form, shows the great diversity of these manifestations. Several distinct types of its primary stages are recognized. The formation of apparent macules varying in size from a point to a pea, or larger areas of irregular outline, neither of which are elevated above the general surface, but are felt to represent infiltrations of the cutaneous tissues of varying depths — *L. maculosus, planus.* Papules, tubercles, nodules, or much larger areas elevated above the surrounding skin to the extent of a line to a half-inch. Like the former lesions these are found to extend more or less deeply into the skin, and exhibit the same boggy, yielding consistence when pressed upon with any blunt pointed instrument. These constitute *L. tuberculosus, nodosus, elevatus, tumidus, non-exedens, non-ulcerosus.* A more minute description of these ordinary early lesions, included under the common term lupoma, would be wholly superfluous.

Some modifications of these forms occur through progressive changes in the surrounding cutaneous tissues. Thus we may have an accompanying lymphangitis, persistent œdema, teleangiectasis, great general thickening or pachydermia, with papillary hypertrophy of the affected regions, *L. œdematosus, hypertrophicus, papillosus, elephantiasicus,* etc.

All these cutaneous changes constitute the various manifestations in its periods of progressive development or evolution.

Lupus undergoes involution or retrogression by interstitial resorption, fibrous degeneration, and ulceration. The earliest indication of the first named process is a change in the epidermal covering of the primary lesions in the form of scales in varying amount, *L. exfoliativus, psoriasicus.* Then follow a shrinking and depression of the elevations, and the slow formation of a smooth scar, an atrophic process. The fibrous forms of metamorphosis are divided by Vidal and Leloir into a so-called *L. sclereux,* which is never total, and is regarded by them as a slowly progressive form of development which remains virulent, containing bacilli and yielding positive results on inoculation, and *L. sclerosus, fibrosus,* a retrogressive change, no longer virulent, and not to be confounded with the scar formation which follows ulcerative forms.

Ulceration takes place in lupus tissue in a variety of forms, *L. exedens, ulcerosus,* which, according to the rapidity or penetration of the process, has received other designations — *superficialis, serpiginosus, profundus, vorax, phagadenicus.* The determining causes of this secondary process are not clearly understood. It is most probably not the result of the action of the tubercle bacillus, but of the accidental introduction into tissues already impressed by the former of suppuration-producing cocci.

The outcome of this destructive process is the eventual formation of true cicatricial tissue, and the development during its course of a variety of transitory conditions: crusting stages are *L. crustosus, rupoides;* excessive or exuberant granulation is *L. fungoides, vegetans.* Finally, the cicatrix is established, capable itself further of hypertrophy, *L. keloides,* and of presenting every possible appearance in its permanent state, according to the seat, treatment, etc.

These are the cutaneous changes which constitute the conditions ordinarily comprised under the term lupus. With so many elements of expression at command, it is evident that with its chronic course and associated dermatoses of occasional occurrence, dermatitis, erysipelas, etc., it is capable of exhibiting very great variety of appearances in individual cases.

II. — TUBERCULOSIS VERRUCOSA, VERRUCA NECROGENICA.

Verruca necrogenica, or anatomical tubercle, had long been recognized as a chronic, inflammatory, wart-like tubercle, affecting primarily the fingers of persons working in dissecting and autopsy rooms, ward-tenders, and butchers. In the last revision of our system of classification, in 1884, it was placed under "hypertrophies of the epidermal and papillary layers," next to

[1] Read at the meeting of the American Dermatological Association at Washington, September 23, 1891, introductory to the discussion upon Cutaneous Tuberculosis.

ordinary verruca. Besnier and Vidal were the first to call attention to its occurrence upon persons making autopsies of subjects dying of consumption, and its resemblance to some forms of lupus. In 1884, bacilli were discovered in its tissues. In 1885 they were also found in several instances in the tubercles which had probably been produced by tuberculous inoculation, and in the inflamed axillary glands connected therewith. Early in 1886, Riehl and Paltauf published their article on "Tuberculosis Verrucosa Cutis," in which the clinical and anatomical features of this now well-recognized form were described, and its probable identity with the more restricted anatomical tubercle established. The presence of the tubercle bacillus in the lesions of all clinical varieties was also demonstrated. Since then its peculiar and multiform features have become familiar to dermatologists everywhere, as its occurrence is found to be by no means rare, and but few fail to regard it as a phase of cutaneous tuberculosis. It may fairly, I think, be accepted as the ordinary form of manifestation in the cutaneous tissues of the inoculation of the same with tuberculous matter, whether derived from the cadaver of man or other animal, or by contact with infective material from living subjects. There is a considerable variation in the character of the lesions, from the primary and small nodule of more or less inflammatory type with its subsequent wart-like papillary hypertrophy, to the more extensive areas of deeper infiltration and greater prominence, characterized by well-marked verrucous transformations of some parts of its surface, by isolated or grouped, dull or purplish-red tubercles or nodules in others, and by depressed cicatricial changes in the central or other portions. Areas thus affected may be an inch, or even several inches in diameter, and may present various combinations of the above lesions. The papillomatous features may be wholly absent. When the plaques are multiple, and this condition is by no means infrequent upon the hands, we have opportunity of seeing how varied may be the expression of the disease even upon the same individual. The amount of inflammation incident to the developmental stages is variable also, manifesting itself in zones of surrounding dermatitis, or in the formation of superficial or deeper foci of suppuration within the diseased tissues. It rarely undergoes ulceration. But I need not more particularly describe a condition with which you are all familiar, and concerning which several members of this Association have recently published communications. Among them Dr. Morrow's case is especially noteworthy, as occurring upon the face and presenting so exceptional a form of papillomatous lesion.

III. — TUBERCULOSIS CUTIS.

This title was applied, before its true and more comprehensive significance had become so generally accepted by dermatologists, to certain rare forms of disease, which must be here mentioned. In nearly all text-books and general treatises on skin diseases, even those most recently published, one finds the same definition, a brief transcript in fact of the description of certain ulcers observed by Jarisch, Chiari, Kaposi, and others, occurring about the orifices of patients in advanced stages of consumption, upon the lips, about the anus and vulva, and extending to the adjoining mucous membrane. These ulcers were discreet and shallow, had eroded, slightly infiltrated, irregular edges, and presented a reddish-yellow, granulating surface. Miliary tubercles were found associated with their extension within the buccal cavity, and in one instance within the true cutaneous tissues surrounding the ulcer. There is no apparent reason for regarding these classic cases as otherwise than exceptional forms of local auto-inoculation, assuming a rapidly ulcerative state from the generally depraved condition of the patients' tissues. There is certainly nothing in them to warrant the establishment of a special class on their account.

Under the title *dermatitis tuberculosa acuta*, or general miliary tuberculosis, Heller has described the case of a child in which there was an outbreak of macules, papules, vesicles, and bullæ over the whole surface, subsequent to the development of caseous glands adherent to the right innominate vein. Bacilli were found in the contents of the vesicles, and in sections of the affected tissues.

Under the term *tuberculose pustulo-ulcereuse* Dr. Gaucher, of Paris, described at the last meeting of the International Congress of Dermatology an affection occurring in young children, characterized by impetiginous pustules, superficial in their early stage, but terminating in deep ulcerations, circular in shape, and covered with crusts. Inoculation of the pus from these lesions upon animals produced mild peritoneal tuberculosis. He regarded it as identical with some of the cases described by older writers as *impetigo rodens*. The process was of benignant type.

IV. — SCROFULODERMA.

This is a term most commonly applied to the progressive changes which take place in the skin covering so-called scrofulous glands in the neck. The primary seat of the process is generally either in the subcutaneous fibrous tissue, in the lymph glands themselves, or in the periglandular structures. Briefly described there is first noticed a firm, circumscribed infiltration beneath the skin, which slowly becomes larger and more prominent, and finally is felt to soften. The overlying skin is sooner or later implicated, becomes hyperæmic, thinner, and finally breaks down at one or several points, allowing the escape of the fluid matters beneath. Thus is established an ulcer. These ulcers vary greatly in appearance, size, numbers and duration, and heal after months or years, by the formation of variable scars. The process in its various phases has received the following names: scrofulous glands, scrofulous sores, white swelling, cold abscess, *gommes scrofuleuses*, *gommes scrofulo-tuberculeuses*. Similar chronic changes resulting in destruction often take place in the skin overlying tuberculous disease of joints and bones.

Here, too, must be placed tuberculous dactylitis, a condition of the fingers and toes, principally the former, in young children, characterized by bottle-shaped enlargement and chronic inflammation of the over-lying integument, and terminating often in destructive ulceration of the same. This affection is of much more common occurrence than the syphilitic process, which it so closely resembles, and is, in my opinion, often mistaken for the latter. The ulceration resulting from all these forms, but especially that connected with scrofulous glands in the cervical region, sometimes extends far beyond the original underlying disease into the surrounding integument, and may continue to progress indefinitely, destroying large areas of skin, or new foci of ulceration may establish them-

selves in the neighborhood of the primary ulcer by the process of auto-inoculation without doubt.

Closely allied to these ordinary forms of glandular tuberculosis is a rare affection described by Hallopeau and Goupil under the title *Lymphangiectasie suppurative tuberculeuse*. Swellings form along the course of the lymphatics, varying in size from a filbert to a small egg. The overlying skin softens and ulcerates, and gives issue to a discharge of lymph containing bacilli. The process upon the lower legs is accompanied by much swelling.

Certain dermatoses have been regarded by writers as forms of scrofuloderma, as the so-called lichen scrofulosum. They are disorders of the skin occurring at times in patients who are affected by tuberculosis, but they are in no way tuberculous processes.

Perhaps some reference should here be made to Unna's "tuberculous eczema," so-called. That the skin immediately surrounding tuberculous lesions in an active state may be stimulated into a sympathetic dermatitis of eczematous type is well known, and that an eczema in a person affected with tuberculosis of any tissue of sufficient gravity to impair general vitality may be somewhat modified by such an impression is not improbable, but I have seen no reason advanced for recognizing a specific tuberculous eczema. Such an appellation without proof is as objectionable to me as the expression "syphilitic eczema."

Finally, in connection with such pseudo-tuberculosis, I desire to state that in my opinion there is not sufficient evidence for regarding lupus erythematosus as an affection to be considered in this paper.

There are some other forms of disease of the integument, tuberculous in character, which are occasionally met with, closely allied to some of the clinical forms above described, which, I have reason to believe, are not ordinarily recognized as such, and which I have been in the habit of designating as unclassified tuberculosis. With the simple statement that they are mostly deep-seated, chronic processes of restricted area and often associated with evidences of tuberculosis elsewhere, I will not attempt to define them more particularly now. This is equivalent to the statement of my opinion that we are not yet thoroughly familiar with all possible manifestations of cutaneous tuberculosis.

Such then are the tissue changes by which tuberculosis manifests itself in the cutaneous structures. The mere enumeration of the processes shows how varied are the methods by which the skin expresses its resentment of the irritating presence of the virus. We find that we may have erythema, followed by deep infiltrations of corresponding size and hyperæmic elevations, ranging from small papules to tubercles of large size, which may gradually undergo absorption and leave atrophied scars, or soften and remain in conditions of discharge and open ulceration indefinitely, destroying by serpiginous progress large extents of integument, and terminating in depressed or hypertrophied scars. Firm and densely sclerous infiltrations without marked tumidity and verrucous outgrowth, not tending to secondary changes. Forms of flattened papilloma-like hypertrophy of extremely slow development. Ulceration and destruction of the skin overlying glands primarily affected; deep and prominent, circumscribed nodular infiltrations often of considerable size (gummata), leading to destructive softening and ulcers of indolent type. Tumidity and breaking down of the integument covering phalanges, and primary affections of the larger bones and joints as well. In the surrounding areas of skin not immediately affected we may have dermatitis of various grades and kinds, as well as the implication of subcutaneous structures in the process, the glands, lymph vessels, fibrous tissues, cartilage and bones.

The particular nature of the minute anatomical changes which give rise to these varied appearances, it is not my province to speak of; this will be presented to your consideration by our more competent colleague, Dr. Bowen.

By the concurrence of certain of these lesions in various arrangements and combinations, differing somewhat in sequence, course and duration, in the locality affected and clinical history, more or less well-marked groups have come to be recognized as forming independent affections. It would be needless to look backwards and endeavor to discover a satisfactory reason as to why these ever varying types of one disease have been so long kept apart and regarded as distinct affections. Loose observation, narrow views of pathology, respect for the dicta of the older teachers, antagonism of schools have prevented us from recognizing and properly interpreting the identity of the anatomical and clinical features common to all these pseudo-independent phases. We see the same disposition to unduly magnify the importance and individuality of distinct clinical forms in the two great kindred diseases, syphilis and leprosy, until recently. Sharply marked dividing lines have been supposed to separate the former into well defined stages to the confusion of the student and practitioner, and the equally artificial division between the so-called anæsthetic and tubercular forms of the latter has largely delayed the recognition of its essential etiological nature. The true method of determining the mutual relations of the various diseased conditions we are discussing is by close observation of the features common to them all, and their points of approach and commergence (to coin a word) in individual cases, and not by confining our efforts to demonstrating how far apart certain selected clinical types apparently stand. Let us consider, then, what evidence we possess to-day, unbiased by previously formed opinions, so far as possible, of their clinical and etiological unity.

I. The concurrence of various clinical forms in the same individual.

Since my attention has been especially directed within the last few years to the question of the probable tuberculous character of various obscure conditions of the skin, which I had previously and hastily regarded as chronic inflammatory processes, warty hypertrophies, ulcers of uncertain origin, scrofulous sores, bone disease, questionable syphilitic lesions, or other undetermined cutaneous changes, which make up that too large residuum in the classification of cases in hospital clinics, often bunched under the title, "uncertain diagnosis," and my understanding of their real nature has been made clear to me, I have been surprised to note the frequency of association of various clinical forms in the same person. Perhaps I cannot better illustrate such concurrence than by placing together the notes of cases bearing upon this point, which have fallen under my observation in the past three years.

(1) Girl, aged seventeen. Enlarged glands in neck in state of ulceration; extensive ulceration of surrounding skin; patch of serpiginous lupus on upper right thigh.

(2) Girl, aged eighteen. Chronic ulcerating glands in neck; chronic tubercles on leg in state of ulceration; ulcer on palate; lately, tubercular lupus of nose.

(3) Man, aged thirty. Serpiginous lupus of face, of varied type, said to have begun after a cut upon its site. Fifteen years' duration. Lately, a patch of deep tubercular infiltration upon arm.

(4) Girl, aged sixteen. Swollen glands in neck for eight years. Lately, active ulceration extending in broad belt from ear to ear.

(5) Girl, aged twenty. Scrofulous glands in neck, some of them in state of ulceration. Tubercular and ulcerative lupus on front neck. Sclerous lupus of face. Solitary and large tubercle on back.

(6) Child, aged eight. Verrucous tuberculosis of wrist. Lupus-like tubercles on knee and arm.

(7) Child, eighteen months old. Tuberculous dactylitis of fingers. Chronic scattered tubercles on same arm.

(8) Child, aged nine months. Dactylitis of one hand. Scattered nodules and tubercles on arms and legs.

(9) Child, aged six. Swollen glands in neck, surrounded by large areas of cutaneous ulceration; exuberant ulcerative lupus of nose.

(10) Man, aged sixty-three. Multiple tuberculosis verrucosa of fingers of left hand. On same forearm tubercular, ulcerative and fibrous lupus occupying a large area.

Some of these cases offer striking illustrations as well of the concurrence of such cutaneous forms with pulmonary or deep joint tuberculosis, but I shall ask your attention to such association later. They will recall, I doubt not, many similar cases within the recent observation of all of you, and are numerous enough to establish the fact of the frequency of such mixed manifestations in the same person. The very frequent connection of lupus proper with the so-called scrofulous state, is well known. I need only refer to the familiar statistics of Raudnitz and Pontoppidan, recently collected. The former found evidence of scrofulosis in thirty per cent. of 209 cases of lupus, and the latter determined a scrofulous basis in a still larger percentage in lupus.

Several objections would be raised, I am aware, by the opponents of these modern views of unification to evidence drawn from facts as these just presented. First, that the simultaneous or consecutive occurrence of such forms is mere coincidence, or that lupus is associated with scrofuloderma, because they are both indications of a depraved vitality, although independent affections. This is, of course, simply a restatement of the old dictum, the very proofless assumption which so long remained unquestioned. Second, that the cutaneous lesions exhibited in my cases, with the exception of the "scrofulous" glandular disease, disposed of as above stated, were merely the protean manifestations of lupus alone. But this would be extending the definition of lupus to an extent so comprehensive as to include every form of cutaneous tuberculosis, or, in other words, to admit the unity we are contending for. Third, it may be asked, How do you know that the extraordinary lesions described by you as associated with your lupus and scrofuloderma cases are tuberculous in their nature, admitting for the moment that the latter changes are so? Because in many examples of all these forms this fact has been established by careful examination of their anatomical and bacterial elements, and by inoculation experiments conducted by many competent observers. It may be also legitimately replied, How does one know that unusual forms of cutaneous lesions occurring in an analogous affection are positively syphilodermata? Does one challenge the syphilographer to establish such diagnosis by microscope and inoculation? No, one must trust the skilled observation of the accomplished dermatologist to recognize the nature and position of many changes in the cutaneous tissues by shades of difference in appearances so minute that they cannot be expressed in words.

II. The presence of the *bacillus tuberculosus* in all clinical forms.

The data on which this all-important proof of the essential identity of these conditions rests are now so numerous, have been gathered by so reliable observers in all parts of the world, and are on record in so many well-known publications, that it will only be necessary for my purpose to present them in as succinct a shape as possible.

(1) *Lupus.* In the active and developmental stages of every lesion recognized as characteristic of lupus vulgaris bacilli occur. They are found inside and outside of cells, often in the tissues surrounding the lesion, are always sparsely distributed, and are of low vitality compared with the activity they manifest in other forms of tuberculosis. In the retrogressive phases they are still less abundant, or cannot with our present tests be discovered at all.

(2) *Tuberculosis verrucosa.* The bacillus has been found in every active stage of every clinical variety of this form also.

(3) *Tuberculosis cutis.* In the various forms of disease above described under this head, including the general acute miliary affection and a variety of ulcerative processes, bacilli have been found, in the fluids of vesicular and pustular lesions, and in the secretions of ulcers.

(4) *Scrofuloderma.* In every form of cutaneous scrofulosis the bacilli also occur. In the glands in their active and caseous stages of inflammation, in the discharges from the overlying skin, when implicated in the process, and in the ulceration of the integument spreading from such foci or excited in surrounding areas through probable auto-inoculation. They were discovered also by Hallopeau in the suppurative lymphangiectasie described by him.

There are few dermatologists now, I presume, who doubt the occurrence of this bacillus in every form of cutaneous tuberculosis, or who misjudge the negative significance of its relative sparseness and inactive qualities in these various clinical phases. That this bacillus is the direct exciting cause of all the lesions we have been considering, there can be, I think, as little remaining doubt. The gross character of these cutaneous manifestations, their course, and their very diversity of type is in close analogy with that other great bacillus disease, leprosy, as with syphilis, whose kindred nature, I doubt not, will ere long be as positively demonstrated. It is of little moment to discuss whether the bacillus produces this manifold impression upon the cutaneous tissues containing it by its mere mechanical presence, or by the irritative action of ptomaines or other chemical agents produced by it, the responsibility rests upon the tangible bacterium. That this bacillus in all these forms is the same, and that it is identical with that of pulmonary tuberculosis is proved by the results of

III. Inoculation Experiments.

Here, too, it would be wholly a waste of time for me to present to you the details of the experimentation so extensively conducted in all parts of the world since the introduction of this test by Professor Koch. It has established the following facts:

The bacilli of pulmonary tuberculosis when inoculated upon guinea-pigs produces tuberculosis. Pure and prolonged cultures of the same produce like results.

The cutaneous tissues of scrofuloderma, lupus, anatomical tubercle, tuberculosis verrucosa, and miliary tuberculosis have all repeatedly produced more or less general tuberculosis when inoculated upon this animal.

According to Lingard the intensity or virulence of the effects of such inoculation varies in accordance with the activity of the bacillus growth in these respective forms. Thus guinea-pigs inoculated with the tubercular matter found in sputa or verrucous tuberculosis, die of tuberculosis on an average in 80 days, inoculated with material from scrofulous glands in 206 days, and with lupus tissue in 331 days. These results are confirmed by Leloir's investigations. He regards the difference between lupus and other forms of tuberculosis, so far as their comparative virulence is concerned, to be one of quantity rather than of quality.

Now the natural conclusion from these experiments is that these materials, derived from such various clinical forms of disease, produce one and the same form of tuberculosis in animals, because they are all merely varying expressions of the same disease. An objection has been raised, as you know, to the soundness of such conclusions on the ground that these inoculations should reproduce the respective local forms from which the material employed was derived; that is, that lupus inoculated should produce lupus. Setting aside the reports of the few cases in which such local lesions have resulted as might be thus interpreted as too exceptional to establish such a possibility, it seems to me a perfectly satisfactory explanation, that the cutaneous tissues of the animals experimented upon are simply an unfavorable soil for the development of the bacillus tuberculosus. Is it not as difficult to inoculate leprosy upon animals (or syphilis) and does not the bacillus of leprosy show a strong selective affinity for certain human tissues over others? The inoculation of material from syphilitic lesions upon human tissues does not reproduce the form of lesion or stage of the disease from which it was derived. Why then should this be expected of the lesion or stage of tuberculosis hitherto called lupus? We know too little of the conditions which influence the biology of bacilli to permit such arguments to control legitimate deduction from the positive data furnished by these experiments.

IV. Auto-inoculation. Transference of infection from one host to another.

But opportunities are not wanting of studying the effects of the inoculation of many or all these forms of tuberculosis upon the human skin, although this has not been conducted by design or studied in the initial stages. Instances of the transference of the disease from one part of the cutaneous surface to another, or from one host to another, are so numerous that this origin of skin tuberculosis cannot be denied. The history of the sequence of development of many a case of multiple forms, of which examples from my clinic have been already cited, warrant this conclusion. The details need not be repeated. Cronier reports cases in which lupus was developed after spontaneous openings of caseous lymph glands, collections of pus in bones, and deep fistulas. Five were cases of gland origin, three of osteomyelitis. Achard cites numerous cases of lupus verrucosus occurring on the seats of former subcutaneous gummata. Such secondary forms can immediately follow the evacuation of matter, or after long periods, if the discharge become chronic.

When we consider how exceptionally restricted is the seat of lupus generally, how extremely slow in its ordinary course to invade even its peripheral tissues, confining itself to a small and single area for twenty, fifty or even more years, it seems to me that the consecutive invasions of new territory, often widely separated from each other, can be most reasonably explained in the majority of cases on the theory of re- or auto-inoculation. We find in accordance with this view that multiple seats of lupus forms occur most frequently in children, in whom the disease is more active and open than in adults, whose cutaneous tissues are no doubt more susceptible of infection than those of the latter, and with whom transference of infectious materials from one part of the surface to another is so likely to occur from habits of picking sores, from the more frequent nudity of portions of the integument, and from the more restless contact of the hands with all parts of the body. Cases have been frequently reported where lupus has developed primarily upon the seat of wounds. We shall see below, other evidence of successful direct inoculation of tuberculous matter.

A study of the clinical history of cases shows, too, that cutaneous tuberculosis may be transferred from one person to another, without necessarily repeating the form from which it was derived. The following are cases observed by myself:

Child, aged eight. Verrucous tuberculosis of wrist. Scattered tubercles on knee and arm. A younger sister has similar tubercles on one arm of later development.

Girl, aged seventeen. Verrucous lesions and open ulcerating forms upon both feet. Serpiginous crusting lupus on one thigh. Duration of process three years. Has lived in closest intimacy with a sister who presents extensive areas of multiform tuberculosis of the skin of many years' duration.

I might refer to other instances of lupus occurring in more than one member of the same family within my experience, but these are under present observation. They are not of so frequent occurrence as to indicate that cutaneous tuberculosis is readily or often transferred from one host to another, and this is in accordance with our knowledge of the comparative inactivity or low vitality, and sparse development of the bacillus in these forms.

On the other hand, there is an extensive collection of observations, which demonstrate how readily the skin may become infected by bacilli in the more active condition and greater abundance in which they occur in the sputa of pulmonary tuberculosis. Jadassohn reports a case of the development of lupus upon the site of a tattoo mark, coinciding with the lines of the design. The operator had phthisis, and mixed his pigments with his own saliva. Dubreuilh has collected seventeen cases of tuberculosis of the penis after circumcision, in which the ritual operator was in consumption. The peculiar nature of this operation

is well known to you all. In several of these bacilli were found in the lesions. Behrend gives an account of a patient with laryngeal and pulmonary phthisis, who was bitten by a gnat on the finger, produced an excoriation of the part by scratching, and wetted it repeatedly with saliva. This terminated in a sore, which did not heal, and presented every appearance of cutaneous tuberculosis. In Dubreuilh's case a young woman washed the handkerchiefs containing the sputa of a phthisical patient. Nodules developed upon her fingers, followed by swelling and suppuration of the axillary glands. In the next few weeks small nodules appeared along the course of the arm, which broke down and discharged. The original lesions upon the hands became verrucous. Bacilli were found in all the lesions and in the discharge from the axilla. Inoculation in guinea-pigs gave positive results.

Here follow the cases of cutaneous tuberculosis which have occurred under my own observation within the last three years, in which favorable conditions for such infection through sputa existed:

Woman, aged thirty-two. Chronic tubercular mass on thumb of two years' duration. For a long time previous to its appearance she had been nursing her husband in consumption.

Child, aged eighteen months. Scattered tubercular lesions on arm, with dactylitis of hand. Mother died of consumption after nursing it six months.

Child, aged nine months. Dactylitis and many scattered tubercles on limbs. Mother had phthisis.

Woman, aged sixty-five. Diffused infiltrated patch on back of hand, and verrucous lesion on finger of same. Was nursing daughter in consumption when it appeared.

Woman, aged sixty-six. Multiform lesions on back of left hand and forearm of six years' duration. It appeared while nursing daughter in consumption.

Child, aged twelve. Open ulcerative lupus of nose. Sclerous lupus on neck. Sister has ulcerative tuberculosis of palate.

Woman, aged fifty-eight. Verrucous tuberculosis of finger. It appeared two years ago, just after nursing daughter, who died of consumption.

Woman, aged forty-eight. Open ulcerative tuberculosis of left wrist of eighteen months' duration. Husband and daughter have died of consumption within the last two years. The latter had "open sores."

Girl, aged six. Swollen glands in neck, surrounded by extensive ulceration for three years. Exuberant ulcerative lupus of nose of six months' duration. Father died of consumption when she was fourteen months old.

Man, aged sixty-three. Numerous tubercular and ulcerative lesions covering large areas upon the left forearm. Several deeply infiltrated verrucous forms on fingers of left hand. The disease began on finger seven years ago, about the time of the death of wife from consumption.

Woman, aged twenty-four. Tuberculosis verrucosa of left forefinger of five years' duration. Mother died of chronic consumption two years ago, and was nursed by her.

Woman, aged forty-eight. Verrucous tuberculosis of two fingers of nine months' duration. Had previously attended a patient in consumption, who had also had for four months an "open sore" on neck.

These cases of probable inoculation might be corroborated by great numbers of others taken from recent reports. Dubreuilh, who has collected sixty of them, presents the following account of the usual course of the process: The earliest lesions after inoculation in an adult are generally either a panaris or an ulcer with a livid erythematous border, becoming later verrucous in portions or over its whole area. In the vicinity of the primary sore nodules, either within or beneath the cutaneous tissues, often appear along the course of the lymphatics, presenting at times the aspect of scrofulous gummata, and followed by adenitis. In infants tuberculous meningitis has often supervened, and in adults these local manifestations have frequently terminated in pulmonary tuberculosis. He concludes farther, that infective matter derived from surgical tubercle, which is poor in bacilli, produces a cutaneous tuberculosis of slow progress, lupus forms, which is also poor in bacilli, whereas the inoculation of tuberculous sputa gives rise to painful ulcerations and carious lesions rich in bacilli.

Now it may be claimed that all such cases as these by no means prove the fact of inoculation, but that they may be explained on the old theory of diathesis, which has hitherto given such complete and easy satisfaction. Everybody must admit that diathesis, so-called, is only an inferential condition, and rests on no scientific or tangible basis whatever, whereas inoculation with infective matter and consecutive tissue changes, both local and universal, is a fact capable of the clearest demonstration. If, then, we can explain a series of observed facts, which closely resemble in their successive details the undoubted phenomena produced, artificially or otherwise, by inoculation, why should we ever think of interpreting their occurrence on a purely imaginative basis of causation? Why should we resort to pure assumption or supposition until natural and physical methods of accounting for their occurrence are first shown to be of impossible application? The days of diathesis are numbered, I believe, and their figmentary existence will vanish when it is shown that they are no longer necessary to explain the occurrence of diseases which closer observation is demonstrating to be capable of interpretation under laws which come within the scope of scientific reasoning and experimentation. A diathesis will, in my opinion, ere long be shown to be as unnecessary for the explanation of all the phenomena of tuberculosis, as it is to-day for leprosy, and always has been for syphilis.

In every one of the cases I have reported from my own observation, the undoubted opportunity for inoculation was present. It is, of course, impossible to fix the precise date of this event in studying the history of a case at a period so remote from its inception, nor have we yet positive knowledge of the period of incubation, or sufficient data as to the appearances of the earliest local manifestations after inoculation. Such evidence as these family cases present would be accepted without the slightest hesitation as a satisfactory explanation of the source of syphilitic infection developing in wife, child, or nurse of a patient affected with this disease. Why then should we regard with more scepticism the lessons as to the contagiousness of tuberculosis which these cases teach? When we consider the possible opportunities of contact with the infectious sputa of consumption, which occur in families under the existing carelessness and ignorance concerning their dangerous character which everywhere prevails, it is only surprising that such cases are not more frequent. It can only be explained on the ground

that the cutaneous tissues of man are but slightly susceptible to the reception, and afford an infertile soil for the development of the bacillus tuberculosus. Leloir, in his recent communication to the *Congrès de la Tuberculose*, gave the results of his inoculation of lupus tissue upon animals in two hundred cases. He found that it never produced tuberculosis in the guinea-pig when inoculated into the hypoderm, but that it almost infallibly produced the disease when inoculated into the peritoneum of the same animal. It may be considered probable, indeed, that a sound epidermis is a complete shield of safety against the dangers of inoculation by surface contact. Would that the mucous membranes possessed the same immunity!

V. Association with pulmonary tuberculosis.

Another proof of the identity of these various forms of cutaneous disease with tuberculosis, is their by no means infrequent connection with the pulmonary form in the same person. I need only quote from well-known statistics to establish this significant concurrence: Besnier has reported that twenty-one per cent. of his lupus patients died of phthisis; Leloir states that of nineteen lupus cases ten were in consumption; Sachs reports that of 166 cases of lupus thirty-four per cent. had tuberculosis in some form before the cutaneous manifestations, and sixty-two per cent. subsequent to the development of the latter. Such ratios might be largely extended by quoting the figures of other observers. The following three cases from my clinic within the last year will serve as an illustration of such association of forms in America, an experience which would be corroborated by the observation of all who are present, I have no doubt.

Girl, aged sixteen. Lupus of nose of six years' duration. Unmistakable signs of tuberculosis of right upper lung.

Woman, aged forty. Tuberculosis of left thumb, and palm and back of right hand. In advanced chronic consumption.

Man, aged thirty-five. Sclerous and ulcerative lupus of upper thorax. Apex of lung affected.

The secondary infection of the skin in pulmonary tuberculosis admits of ready explanation, for sputa rich in active bacilli must be constantly coming in contact with the fingers in the use of the handkerchief, and the hands are often used to wipe the mouth after expectoration or coughing among the poorer classes, as is well known. The prevalence of such uncleanly habits and the infrequency of such transfers, strongly illustrates, as just mentioned, the immunity of the skin to such chances.

The development of pulmonary tuberculosis subsequent to the existence of cutaneous forms upon an individual, may be explained, of course, by the direct transfer of infective matter from open lesions upon the surface to the air-passages, and such extension to internal organs in any way is in accordance with the clinical record of kindred diseases. The manifestations of syphilis may be confined wholly, or for a considerable period of its course, to the skin, whilst in leprosy it may long be the only field of exhibition before other tissues are affected.

I should not neglect in this connection to mention the opinion which prevails among French dermatologists, that pulmonary tuberculosis is often developed as a result of the operation of scarification, as used by them in the treatment of lupus, in consequence of thus setting free the bacilli to enter the general circulation.

In connection with this question of self-infection, it may be of interest to note that at the meeting of the *Congrès de la Tuberculose* just referred to, M. Lespinne described certain manifestations observed at times in cases of lupus, chiefly in ulcerative forms, which indicated a general intoxication of the system. They consisted of rapid elevation of temperature, catarrhal symptoms of the mucus and serous tissues, and a typhoidal condition, simulating a dothinenteritis, or acute miliary granulation. As soon as the elimination of these infectious products has been accomplished, these phenomena disappear, or they may be the precursor of a more general tuberculosis. He has seen them terminate in this disease of the peritoneum and lungs. In his opinion this state of general infection could be caused either by the bacilli or the agents of suppuration in the lupus tissue.

With all this accumulation of varied evidence bearing upon the question, the concurrence of various forms upon the skin of the same person, the demonstration of one bacillus in all these clinical forms, the uniform results of the inoculation of such tissues and the bacterium itself upon animals, the clinical proofs of re- or auto-inoculations of these forms upon the original patient and of their transference to others, the established association with pulmonary forms of the disease, with all this evidence, I say, I do not see how any reasonable doubt can be entertained with regard to the essential identity of every form of tuberculosis with which we are acquainted.

RELATIVE FREQUENCY OF CUTANEOUS FORMS.

It has been common belief amongst us that lupus is far less prevalent in this country than in Europe, whilst pulmonary tuberculosis is of more frequent occurrence here than there. Of the correctness of the former opinion I have presented statistical proof to this Association in former communications.[2] Such unequal prevalence among nations may well be explained by the differences in habits of personal cleanliness which characterize them. But with the enlargement of our definition of lupus we have been considering, these figures need revision, and the inquiry should comprehend all forms of cutaneous tuberculosis. With regard to the comparative prevalence of these various clinical forms amongst ourselves, I can only present the following brief statistics gathered from my own observations during the last two years in my clinic at the Massachusetts General Hospital. In this period sixty-nine new cases of cutaneous tuberculosis were recorded, representing the following clinical varieties: Scrofuloderma, thirty-four; lupus vulgaris, five; other forms, thirty. This subdivision is not intended, of course, to represent sharply differentiated processes in all cases, but it loosely expresses with sufficient accuracy, the relative prevalence of the clinical varieties as they occur here. The ratio of their combined number to all cases of skin disease observed at my clinic during the same period is 69 to 4,644.

AGE.

It was the tenet of Professor Hebra that lupus rarely, if ever, developed after the age of twenty, and usually showed its first manifestations in childhood. This rule was often used to determine diagnosis in doubtful cases. It may be that typical lupus does

[2] Variations in Prevalence, etc., 1876. Immigrant Dermatoses, 1880.

present itself in the majority of instances at this early period of life, and, if so, it must be accounted for by the greater susceptibility of the skin in youth to the reception of the specific germ. We see confirmation of this in the character of the lesions and the greater activity of the process which lupus always exhibits at this age, and its not infrequent spontaneous and complete extinction after middle life. So far, however, as the history of the other clinical forms we have been considering, teaches, it is apparent from the case above cited within my observation, that no such limitation to the dangers of inoculation exists, and that the skin exhibits such susceptibility both in middle life and at advanced age.

HEREDITY.

Upon this important etiological question, I beg to reproduce here, the opinion I expressed in a paper on "Hereditary Dermatoses" communicated to the International Congress of Dermatology and Syphilography held at Paris, in 1889, and I do this with less hesitation because it has not been published in a form generally accessible to members of this Association.

That general or pulmonary tuberculosis is hereditary and transmissible has been commonly accepted as a perfectly settled fact, as it seemed to furnish the only plausible ground for its marked occurrence in families. It has never been denied, however, that it might develop independently of inheritance. When its bacillus nature was recognized, it furnished a satisfactory explanation of the occurrence of the latter class of cases. But it also raises the question, if it will not likewise account for cases hitherto regarded as hereditary, that is, for every case. Admitting the infectious character of tuberculosis in any form at all, and the capability of transference from person to person by direct contagion or inoculation, is the theory of hereditability longer necessary? *A priori* we cannot deny the possibility of intra-uterine infection, even if the connection between mother and fœtus is so little directly intimate, nor of the preceding bacillous inoculation of ovulum or the male germ. Such cases of congenital infection are extremely rare. The burden of proof in this question should, it seems to me, as was said of leprosy, be transferred to the advocates of the hypothesis of heredity. As to the transmission of a predisposition which shall render a person more liable to the disease after birth, but which is not the disease and requires a fresh infection to make such peculiar fertility available, that is a nicety in the problem of heredity which I cannot appreciate, considering that the bacillus of every form of tuberculosis is readily received and developed in the normal tissues of perfectly healthy animals. So, too, with regard to some tissue changes of childhood regarded as the indirect result of tuberculosis and not tuberculosis itself.

Mr. Francis Galton, in his recent interesting work on "Natural Inheritance" gives the history of 66 marriages in which one of the parents had "consumption." There resulted from these unions 413 children, of which number 107 had, or were suspected to have, consumption, equal to twenty-six per cent. Inasmuch as its prevalence in the general population is sixteen per cent., his inference is that this increase in rate may be fairly attributed to the greater chances of infection in such families. He found, too, that when the mother was the consumptive parent, the proportion of consumptive children was larger than when the father was the affected parent, which he explained by the fact that during infancy the child "lies for hours daily in its mother's arms, and afterwards lies much by her side, breathing the tainted air of her sheltered rooms." If the infant may acquire the disease from the milk of tuberculous cows, why not also from that of its diseased mother? We may not claim then that any case of cutaneous tuberculosis in any form is inherited until every possible source of extra-uterine infection has been eliminated.

CONCLUSIONS.

In conclusion, it seems to me, that on the evidence in our possession, collected within the last few years, under a more enlightened and unbiassed judgment as to its pathology, and presented in a necessarily brief and incomplete form in this paper, we are warranted to regard the various clinical conditions of the skin we have been considering, as simply cutaneous phases of one comprehensive affection, which, with its pulmonary and other tissue manifestations, constitute that most important of all diseases, tuberculosis; as much a unit as the equally multiform cutaneous lesions and other tissue changes which characterize syphilis and leprosy. In my opinion it would greatly conduce to the quicker adoption of this consistent view of the true relations of all its forms, if we should entirely cease to make use of such independent terms as lupus and scrofuloderma, and hereafter designate such clinical or local varieties by no more distinctive titles than we employ in the description of the manifestations of leprosy or syphilis. The sooner and clearer we make it apparent to the public and the profession that all lesions of tuberculosis are dangerous and contagious, and mutually convertible, the more easily shall we gain control over the future course of the greatest scourge of mankind.

THE PATHOLOGY OF CUTANEOUS TUBERCULOSIS.[1]

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IN this paper, that I have the honor to contribute to the discussion upon the subject of cutaneous tuberculosis, I shall confine myself as closely as possible to the anatomy of the various forms of this disease, considering that allied questions often discussed under the head of pathology, will be presented more properly by the other participants.

Under the head of cutaneous tuberculosis, we must include, in the present state of our knowledge, scrofuloderma, lupus, and two other clinical forms that were not until recently admitted to a place in this class. These two forms, the only ones, with the exception of lupus and scrofuloderma, that have offered substantial claim to be considered as distinct varieties, are the miliary tuberculosis and tuberculosis verrucosa cutis. We have thus four forms of cutaneous tuberculosis to consider, scrofuloderma, lupus, miliary tuberculosis and tuberculosis verrucosa cutis. The claims of tuberculosis verrucosa cutis to be regarded as a distinct variety have sometimes been questioned, and will be considered in their proper place.

No one doubts to-day that in tuberculosis we have

[1] Read at the meeting of the American Dermatological Association, in Washington, September 23, 1891, introductory to the discussion upon Cutaneous Tuberculosis.

to do with a chronic infectious disease caused by the action of a specific bacillus. The work of Koch and Baumgarten, together with the valuable contributions of other investigators, has demonstrated this truth so brilliantly and positively, that no other belief in the domain of pathology can be regarded as more securely established. Furthermore, the same investigators have cleared up the mystery surrounding the term scrofula, by demonstrating that the larger part at all events, of the affections formerly termed scrofulous, are in reality tuberculous troubles, caused by the tubercle bacillus. In proof of this, they have shown that this bacillus is constantly present and capable of culture in generations, and that these cultures when inoculated upon other organisms produce a true tuberculosis. The subject of lupus has also been vastly illuminated by the pathological studies that have followed in the wake of the discoveries of Koch. For a long time searched for in vain, it was finally proved by Koch, Doutrelepont and others, that the bacillus of tuberculosis, although very sparingly represented, could be demonstrated by a prolonged search in sections of lupus tissue, and further experiment showed that it could be cultivated in generations, and produce tuberculosis by inoculation upon animals. The sole pathological proof that to the most skeptical could now be wanting, was the production of lupus itself by inoculation, and although the clinical evidence that lupus may sometimes at least be caused by a direct inoculation of sputum or other material rich in tuberculous virus, is increasing, it must be admitted that experiment has not as yet succeeded in producing this disease in animals. In consideration of the insusceptibility of the lower animals to many forms of human disease, it seems probable that the last doubt will have to be dispelled by an overwhelming accumulation of clinical facts. The anatomist may fairly demand the aid of the clinician, and an intelligent judgment can only be formed by a consideration of all the evidence.

The tubercle, the product of the tubercle bacillus, is a nodule of so-called granulation tissue, composed histologically of small, round cells deeply stained by coloring agents, together with larger cells possessing a clear nucleus, that have been called epithelioid cells, and large cellular elements, with peripherally arranged nuclei and homogeneous centre, the Langhans giant cells. These cells are enclosed between the meshes of connective tissue, and are characterized, in distinction from normal cells, by their instability. Sooner or later a modification begins in the nodule. Its centre becomes necrotic, that is, the cell protoplasm is coagulated, the nuclei lose their power of responding to staining agents, the intercellular substance also takes part in the degeneration, and there results a coagulation necrosis in the Weigert sense, a condition that has been usually termed a cheesy degeneration. This term, cheesy degeneration, has given rise to much confusion. Virchow long ago pointed out that it was in no sense a condition peculiar to tuberculosis. Its use should be restricted to the macroscopical appearance and consistency of certain products of degeneration, dropping the term entirely from the nomenclature of microscopy.

It has been claimed, at various periods in the history of tuberculosis, that both the cheesy degeneration and the Langhans giant cell were pathognomonic of the affection. Neither of them can now be considered as a specific attribute, inasmuch as cheesy degeneration is found, as has been said, in numerous other conditions, and as the Langhans giant cell, while still retaining an especial association with tuberculosis, can frequently be seen in its typical form in the tissue about vessel ligatures, and in several forms of syphilis — notably in gummata and in the small papular or lichenoid variety. Baumgarten's view that those cases of syphilis in which the Langhans giant cell is found, are a complication of syphilis with tuberculosis, has not been supported by microscopical study nor by experiment. No one has claimed to have found the bacillus of tuberculosis in a gumma, or in a papule of lichen syphiliticus, and experiments upon animals have failed to produce tuberculosis by the inoculation of these syphilitic products. Still, while the Langhans giant cell has lost its claim to be regarded as specific, a certain amount of diagnostic value must be allowed to it, when seen, as there is as yet, so far as I am aware, no record of its discovery in pathological processes other than those of tuberculosis and syphilis.

While it may be said that the course and life history of the tubercle, together with its tendency to progress in the adjacent tissue are to some extent specific, the sole feature that we have practically to regard as pathognomic, is the presence of the tubercle bacillus. The doctrine of to-day reads, every neoplasm that contains the bacillus of tuberculosis is tubercle, and in every tubercle the bacillus must be present, however, sparingly.

Great progress has of late been made in the histogenesis of tuberculosis, by the aid offered by the tubercle bacillus, and by the discovery of new methods of hardening and staining. These methods were inaugurated by Flemming in his search for the evidences of nuclear division, and have been constantly extended and improved. The belief that had existed for some time, under the influence of Cohnheim's exudation theory, that the epithelioid and giant cells of tubercle are produced from the emigrated white blood cells, has been essentially shattered by the experiments of Baumgarten.

Baumgarten introduced bits of tuberculous tissue into the anterior chamber of the eye of guinea-pigs, and allowed the infection to progress for varying lengths of time, when the animals were killed, and the tissue subjected to the modern methods for the detection of karyokinesis. On the second day there begins to be an increase in the number of bacilli, which spread into the neighboring tissue. The first signs of the new tubercle are epithelioid cells, which are seen to be produced from the fixed tissue cells by karyokinesis, and not from the leucocytes or small, round cells Indeed, the leucocytes are not observed until a later period in the development of the tubercle, and no karyokinesis has been seen in them at any stage. Hence Baumgarten regards the epithelioid cells as derived from a proliferation of the fixed tissue cells, and not, as had been supposed, from the leucocytes. It has been doubted whether we are yet justified in regarding the epithelioid cells as in all instances derived from the fixed cells alone, and the history of tuberculosis, with its ever changing beliefs, may properly urge upon us caution in our positive assertions. Nevertheless, the experiments of Baumgarten have proved conclusively that the emigrated white blood cells bear a subordinate part in the development of the tubercle, and that the normal cells of the affected part are the first to be impressed by the virus, which

causes them to assume the epithelioid shape. Next occurs the infiltration of the tissue with leucocytes, which may be present in greater or lesser numbers. When the infiltration with leucocytes has reached its acme, there begins to be a degeneration and death of the cells forming the tubercle. The leucocytes are probably the first to degenerate, they refuse to become stained, and a molecular detritus results. The epithelioid cells are the next victims to the degeneration, their protoplasm begins to shrivel up, and a coagulation necrosis is produced. A further step in the degeneration is a softening of the necrotic mass, and the appearances of a suppuration are falsely produced. But there is no suppuration in tubercle strictly speaking. No pus cells are found with the microscope in pure tubercle, and there can only be a real suppuration when the tuberculosis is complicated with a septic process.

The histogenesis of the Langhans giant cells has been the subject of much controversy. The best belief of to-day is that they are formed not by confluence of several cells, but by nuclear proliferation of a single cell, with failure of the protoplasm to divide. According to Weigert's view, the Langhans cell represents a tubercle in miniature. The centre of the cell undergoes a partial coagulation necrosis, while a proliferation of the nuclei occurs faster than the cell body can divide, thus giving us the picture of a single cell with nuclei arranged along its edge, and a homogeneous centre of necrosis. The failure of the protoplasm to divide so fast as do the nuclei, is probably caused by the irritant not being powerful enough to carry the process of cell proliferation beyond its first stage, that of a division of the nucleus. The irritant in the case of tuberculosis is the tubercle bacillus, and if the bacilli are present in great numbers, the Langhans cell is not found, as the cell proliferation occurs so quickly that the cell division keep space with the nuclear division. This theory is strikingly supported by the case of lupus, where the bacilli are very sparingly present, and where for this reason the number of Langhans cells is very large — much larger than in acute miliary tuberculosis, for example, where the whole process is accelerated, and the bacilli are found in great numbers. Furthermore, the Langhans cells often contain bacilli, situated along the periphery, the part that still lives, and to which they turn for nourishment when the centre has become necrotic.

The theory of Metschnikoff with regard to the Langhans cells of tubercle should be mentioned, on account of the attention that it has excited, and of the ingenuity with which its originator has argued its claims. His theory is that the protection of the organism against many species of bacteria lies in the white blood corpuscles, which seek out the bacilli for their nutriment. The cells that thus receive and feed upon the bacteria, he has called phagocytes, and to this class the Langhans giant cells of tubercle belong. A struggle for existence is constantly taking place between the cells and the micro-organisms, and the bacilli when overwhelmed by their antagonists, are subjected to an intra-cellular digestion by which they are annihilated. Able supporters have rallied to Metschnikoff's aid in his phagocyte theory; but without entering further into the controversy that has arisen, it must be said that the active characteristics that the Langhans cell must possess in order to carry on its warfare with the tubercle bacilli, have not been satisfactorily proved, and that the weight of authority is not in favor of this theory.

Turning now to the special features presented by cutaneous tuberculosis, the first form to consider is:

MILIARY TUBERCULOSIS OF THE SKIN,

as this is the form that represents almost exactly the tubercle of internal organs. It has been called by the French "tuberculose ulcéreuse," but as the property of ulceration is common to many forms of cutaneous tuberculosis, the better title is that of miliary tuberculosis, on account of the almost constant presence of miliary nodules in process of rapid necrobiosis. Clinically this form consists of painful ulcers situated at the juncture of the mucous membrane with the skin at the entrance to the mouth, nose, anus and vagina, and also upon the ear, in patients suffering from pronounced tuberculosis of internal organs. This form is also met with on the mucous membrane alone, and rarely attacks the skin except by extension outward from mucous surfaces. The edges of the ulcer are characteristic, being made up of a series of small indentations, looking as if punched out. Miliary tubercles in the form of yellowish-white transparent nodules can usually be seen in parts of the ulcer. The lesions are rapidly progressive, from a degeneration of the miliary tubercles, and from the confluence of the small ulcers. To Chiari and Jarisch are due the first accurate descriptions of this form, at a time when the tubercle bacillus had not been discovered. Chiari's observations prove the rarity of these ulcers for they were found in only five cases out of a total of 7,000 autopsies, sixty per cent. of the subjects of which were tuberculous.

These lesions have not, so far as my knowledge extends, been studied in the light of the modern histological methods. But all the pathological examinations that have been made, tend to prove the similarity of their structure to that of the miliary tuberculosis of internal organs. The cutis is found to be filled to a considerable depth with foci of small, round cells, with occasional epithelioid and Langhans giant cells. In the centre of these foci the necrosis has progressed rapidly, so that upon macroscopical examination the appearances of softening and cheesy degeneration are apparent. The tubercles often by their coalition form masses of softened and necrotic tissue, in which the evidences of unaltered granulation tissue can only be found in the outlying parts.

In the number of bacilli found in this miliary form there is, I am convinced, a further analogy with the miliary tubercle of the internal organs. In the cases that I have examined they were present in large numbers, in one every field contained enormous masses, and this accords with the experience of Riehl, Doutrelepont and others.

This form has often been classed as a true tuberculosis of the skin, and offered as a powerful argument against the tuberculous nature of lupus, on the ground that the bacteriological and histological features of lupus differ in many respects from this miliary form. That this form presents characteristics not seen, as a rule, in lupus, is freely admitted, but the differences are just those that distinguish an acute from a more slowly progressive tuberculosis of other parts. The process in the miliary form runs a more rapid course. The cells are speedily transformed into masses of necrosis of a cheesy consistency, and the cause of this

accelerated degeneration lies in the great numbers of tubercle bacilli, — phenomena that have been shown to be the rule in acute miliary tuberculosis.

SCROFULODERMA.

The term scrofuloderma is used to describe those cases of tuberculosis where the subcutaneous tissue and the lower portions of the corium, are the seat of the morbid process. Very commonly the starting point is a lymph gland, in which the tuberculous material is formed under the influence of the bacilli, becomes necrotic, and finally breaks into the overlying tissues. Where several lymph glands are involved, deep ulcers with fistulæ of various lengths are often produced. The anatomical character of scrofuloderma differs in no essential way from the tuberculosis of internal organs. A granulation tissue of small round and epithelioid cells, with a moderate quantity of Langhans giant cells, has its seat in the subcutaneous tissue, becomes degenerated, and may break through the thinned and tense layers of the epidermis above, giving rise to the well-known ulcer with soft undermined edges. The degeneration is usually much farther advanced than in lupus, large areas of necrotic, softened tissue being usually visible under the microscope. Experiment by inoculation has, as has been said, proved beyond a doubt that these scrofulous glands and ulcers are a tuberculosis of the subcutaneous tissues. The specific tubercle bacilli are always present. Their detection may, in some instances, be a matter of considerable difficulty; in others they are very abundant, and in general they are much more numerous than is the case in lupus, but not so thickly sown as in the miliary form just considered.

LUPUS.

In lupus we have a tuberculous affection, having its starting point in the corium, affecting primarily the lower portions, progressing upward by extension of the foci of disease, and causing in most instances secondary and non-specific alterations of the epithelial elements. Before the discovery of the tubercle bacillus, histological investigation had already pointed out with much clearness the resemblance existing between the anatomical features of lupus and tuberculosis. Friedländer contributed more than all others to a correct appreciation of this similarity, and argued that the points of difference were not distinctly defined enough to separate the two affections. A considerable controversy then arose between the advocates and opponents of the identity of the two affections on anatomical grounds. Baumgarten pointed out that the cheesy degeneration, so constant in tubercle, was wanting in lupus; that lupus tissue presented less epithelioid and more giant cells; that lupus was more vascular, gave rise to a greater formation of connective tissue, did not present so sharply defined miliary nodules, and was capable of direct suppuration. For these anatomical reasons he considered that lupus should be separated distinctly from tuberculosis. These points of difference, that are true in the main, are now cited to prove the identity rather than the dissimilarity of the affections. Suppuration, however, cannot be claimed as an attribute of lupus, any more than of tuberculosis, as Neisser has pointed out, and as is now generally acknowledged. What we have been accustomed to call suppuration is in reality a breaking down and softening of the granulation tissue. A true suppuration often occurs, but only when a septic process is engrafted on the tuberculous tissue. With regard to the other objections of Baumgarten, they are precisely the points of difference between a rapidly progressive and a more chronic and less virulent process. "Cheesy degeneration," the synonym for an advanced necrobiosis, is not seen in lupus, on account of its slow progress and the small number of bacilli that are present. Whether or not the soil is here unfavorable to their existence, as has been often suggested, they are found in much smaller numbers in cutaneous than in most other forms of tuberculosis. Miliary cutaneous tuberculosis offers the sole exception to this rule, as here the bacilli are usually found in great numbers, and therefore, as would be expected, the tissue presents anatomically a more advanced necrosis.

The larger representation of giant cells and the smaller number of epithelioid cells as seen in lupus, are also characteristics of the more slowly developing forms of tuberculosis, as has been shown by experimentation upon animals, by feeding them with attenuated cultures of tubercle bacilli. In these experiments a very slow and sparse proliferation of the bacilli takes place, and the neoplasm does not progress beyond the stage of the primary epithelioid cell tubercle, or to one verging upon the lymphoid cell tubercle — much the same appearances that we meet with in lupus.

The histogenesis of the Langhans cell has already been referred to in speaking of tuberculosis generally, and the increased numbers of these cells in lupus was evidenced in support of the belief that they are produced when the specific irritant is not powerful enough to effect a division of the cell protoplasm so fast as the nuclei are divided, — the specific irritant being the tubercle bacillus, and sparingly represented in lupus tissue.

Thus, it should be emphasized, that from a purely anatomical standpoint, lupus cannot be separated from tuberculosis. Baumgarten himself, who, as has been seen, was one of the chief opponents of the tuberculous theory from anatomical reasons, declares in his text-book that not the shadow of a doubt can now exist of its true tuberculous nature.

From the experiments that have been alluded to as proving that the epithelioid and giant cells of tubercle are in the main derived from a proliferation of the fixed tissue cells, and not from the emigrated white blood corpuscles, we may confidently assume that the newly-formed cells of lupus are produced in the same way. The first appearance of the lupus tissue is found to be an accumulation of cells, situated about the capillaries and lymph channels, in many cases representing a growth of the adventitia of these vessels. But all connective tissue cells that are affected by the virus of tuberculosis are capable of this metamorphosis, and in view of Baumgarten's experiments, the possibility that the epithelial glandular elements may also take part in the process cannot be excluded. Few studies of the histogenesis of lupus cells have been made in the light of the newer methods of staining and of the conclusions derived from experiments upon the iris. Unna in a recent paper has published the results of his investigations in this direction. He regards the epithelioid cells of lupus as identical with the "plasma zellen" of Waldeyer, and as distinct from Ehrlich's "mast zellen." These plasma cells, he says, represent the first stage of the cutaneous tubercle, and are not derived exclusively from the endothelium of the

capillaries, but from any of the fixed connective tissue cells. He finds nowhere any evidence of the transformation of wandering cells into epithelioid cells, as has been heretofore assumed; the few wandering cells found in the vicinity of the process are sharply distinguished by their small size and by their deeply-stained nuclei, from the epithelioid or plasma cells.

A point of considerable interest in Unna's investigations is his claim that the agglomerations of small, round cells found at the periphery of the lupus nodule are not leucocytes, as is even now assumed, but early derivatives of the epithelioid cells, as is shown by methods of protoplasmic staining. So much, at all events, seems to be settled — that the rôle of the leucocytes in lupus, as well as in other chronic inflammatory processes, has been greatly exaggerated, and that the fixed tissue cells are, at least in the main, the parents of the epithelioid and giant cell formations.

The next stage in the history of the lupus tubercle is the degeneration of the newly-formed cells and of the fibrillary tissue. The cells lying in the centre of the nodule are the first to be affected, their protoplasm becomes homogeneous, while the nuclei lose to a certain extent their susceptibility to staining. Following Weigert, the cells in lupus, as in internal tuberculosis, are regarded as undergoing a coagulation necrosis. Unna opposes this view, on the ground that no coagulation of the protoplasm can be determined, and that there is no death, as yet, of the cell. However, this question may be decided, the process is a degeneration of the tuberculous elements under the toxic influence of the bacteria, and represents the first stages of a necrosis, that is, on account of the small numbers of the bacilli, of slow progression — a stage that we never see in the acute forms.

Together with this degeneration taking place in the epithelioid cells, there is also a regenerative process. The cells are capable of proliferation, when not affected by the virus to the extent of advanced degeneration, and may finally become converted into connective tissue. In this manner is produced the lupoid scar-tissue, that takes the place of the lupus nodule, in the process of healing. Unna, in his work just referred to, regards the scar-tissue in cases of spontaneous healing of lupus infiltrations as different from that following an ordinary loss of tissue, in the fact that there is never a reproduction of elastic fibres, that the connective tissue is never arranged in intersecting bundles, but is placed horizontally to the surface, and that it contains numerous large "cell spindles," rich in protoplasm, which upon section give the skin a striped appearance. Hence he regards this cicatricial tissue as a true lupoid tissue, and not an indifferent substitute for the absorbed tuberculous elements.

An advanced stage of the regenerative process is seen in the elephantiasis that occurs in lupus. Here the tendency to the formation of new connective tissue is so great, and dominates the degeneration to such a degree, that large portions of the body are converted into dense masses of hypertrophied fibrous tissue, containing foci of degeneration to a greater or lesser extent, and presenting clinical appearances quite similar to those of advanced elephantiasis. This formation of new connective tissue in greater or lesser degree as compared with the necrobiosis is one of the causes of the multiplicity of clinical forms exhibited by the affection.

Another complication of lupus is the proliferation of epithelial elements that may take place. So far as our knowledge of the process extends, we must regard these phenomena as secondary and non-specific, caused by the irritation produced by the new formation, and analogous to the epithelial activity in syphilis and other chronic inflammatory processes. The rete may extend its interpapillary prolongations deep into the corium, and with the outgrowth of the papillæ, that is so constantly allied to the epithelial proliferation in all papillomata, the clinical forms of lupus papillaris, verrucosus are produced. A proliferation of the glandular elements may also take place, as was emphasized long since by the studies of Lang.

When the tuberculous infiltration of the corium has reached a certain grade of intensity and the overlying epidermis has become stretched and thinned by the pressure from below, there frequently results a fracture of the epidermis, and the tuberculous foci are laid bare, giving rise to the forms of lupus ulcers. In these instances there frequently, if not usually, exists a complication with a septic process. To the presence of the pus micrococci we must refer all true suppuration that attends a lupus lesion. The pus micro-organisms are very readily engrafted upon cutaneous lesions of any nature, and the tuberculous lesion shares with others the liability to this complication.

TUBERCULOSIS VERRUCOSA CUTIS.

The last form of cutaneous tuberculosis, the anatomy of which we have to consider, is that affection first accurately described by Riehl and Paltauf, under the name of tuberculosis verrucosa cutis, a form nearly or quite identical with the anatomical wart so often found on the hands of those engaged in dissecting rooms and at the autopsy table. As described by Riehl and Paltauf the anatomical characteristics consist of greatly elongated and enlarged papillæ, covered with a thickened, lamellated horny layer, which also fills up the depressions between the papillæ. Between the cornified epidermal layers are found dried masses of exudation, with nuclei that are partially stained, and heaps of granular detritus. The interpapillary prolongations are hypertrophied and extend deeply into the corium in many places. The principal pathological changes are found in the upper layers of the corium, in the papillæ and adjoining layers, which are filled with foci of closely aggregated cells. These foci consist of a granulation tissue made up of round cells at the periphery, large epithelioid and Langhans cells toward the centre, while the centre itself in the majority of cases is formed of a necrotic mass, indistinctly defined at its border. In a word, the histological appearances of tubercle are well defined. Besides these tubercles, foci of suppuration are also found at the points where the epidermis has penetrated most deeply, which finally break through the overlying tissue and form small crypts filled with horny masses from the continued growth of the epidermis. The tubercle bacillus was constantly found in the nodules of granulation tissue. On the average, more bacilli were found than in lupus, but less than in the miliary cutaneous form. Micrococci were found in all the parts where there was an acute inflammation and suppuration.

These observations of Riehl and Paltauf have been verified by the most competent observers. The limits of their original description have been enlarged, in that these wart-like patches have been shown to occur

not only in adults who have had to do with animals and animal products, but in children and in people who have been exposed to direct infection from tuberculous excretions. The only question that can arise is as to the propriety of separating these cases from lupus verrucosus, a form which they often resemble very much both clinically and anatomically.

My interest in this form was excited some years ago and my conclusions are drawn from a considerable number of examinations of lesions, or portions of lesions, removed by the cutaneous punch and hardened and stained in various ways.

The occurrence of foci of acute inflammation immediately below the rete, and the formation of miliary abscesses was emphasized by Riehl and Paltauf as one of the characteristics of this as distinguished from other forms of cutaneous tuberculosis, but was regarded as a secondary phenomenon and due to an invasion of the tissues by colonies of micrococci. In the more typical lesions, those first described by these authors as occurring upon the hands of adult butchers, cooks, etc., as well as in the anatomical wart, these inflammatory complications are indeed most marked. In many papillary growths, however, that undoubtedly belong to this class, this secondary inflammation is very slight or totally wanting, as was verified in a number of lesions that exhibited microscopically the histological appearances of tuberculosis and contained the tubercle bacillus. It may be fairly said, I think, that these inflammatory appearances are frequently found engrafted upon a tuberculosis verrucosa cutis, but their occurrence, in my experience, is not sufficiently constant to render their absence a point of consequence, and in any case they are secondary phenomena. They have not been present to any extent in the cases that I have examined occurring in children upon the hands, elbows, knees, etc., in the form described many years ago by Dr. McCall Anderson, under the title of lupus or scrofuloderma verrucosum. The histological appearances here give us a picture of nests of epithelioid and Langhans giant cells in the upper layers of the corium, with a papillary hypertrophy and an increase of cornified epithelium. Nor were these inflammatory appearances present in several cases of verrucous tuberculosis upon the bodies of people suffering from lesions of scrofuloderma or lupus of other parts. They seem to occur most frequently in the cases that present clinically the features of a typical verruca necrogenica.

With regard to the numbers of bacilli found, I have not been so fortunate as the writers quoted. While the detection of the specific micro-organism has been a comparatively easy matter in some instances, in others it has required a long and laborious search, equal to that demanded for their detection in lupus; and so far as my own researches go, I have not been able to demonstrate a striking divergence from lupus in this regard.

The chief anatomical characteristic that tuberculosis verrucosa affords in distinction from the papillary growths of lupus, is the *situation* of the tuberculous neoplasm. While the foci of granulation tissue lie in the lower and middle portions of the corium in lupus, in tuberculosis verrucosa, they are quite constantly found in the upper papillary layers, usually in the papillæ themselves, and in this respect my experience accords quite exactly with that of Riehl and Paltauf. It must also be admitted that in the form under consideration, the papillary outgrowth occurs at a very early period, perhaps at the very beginning of the affection, while in lupus it is met with most frequently at a later period, when the tissues have become broken down and ulceration has taken place.

Anatomically, therefore, this affection differs from lupus papillaris chiefly in the superficial seat of the process. Many transitional forms may occur, and it may often be difficult to say, from a microscopical examination alone, which of the two varieties we have before us. Riehl and Paltauf have undoubtedly brought into the limits of tuberculosis certain affections that were regarded before as doubtful or classed under other headings, and their work must be regarded as a distinct addition to our knowledge of the disease. For the present, at least, tuberculosis verrucosa cutis should be accorded a separate place among the varieties of this disease. Granting that the anatomical distinctions from a verrucous lupus are often slight, we have still the fact that these lesions were not, until the microscope taught us their histology, commonly classed with tuberculosis or lupus. A further argument in my mind for separating them from lupus, lies in the fact that the clinical evidence in these cases points to their being produced by *direct* inoculation, — a mode of infection that cannot as yet be demonstrated in a large number of lupus cases.

THE THERAPEUTICS OF CUTANEOUS TUBERCULOSIS.[1]

BY GEORGE HENRY FOX, A.M., M.D.,
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In discussing the treatment of tuberculous affections of the skin, it will be convenient to consider first the local measures which may be employed, and then the constitutional remedies which may prove of service in facilitating a cure. In other words, we may regard the subject first from a surgical and then from a medical point of view. I will state at the outset, that I do not propose to even enumerate the various remedies and plans of treatment which have from time to time been recommended, but will confine myself to a discussion of those which have the sanction of high authority, and those which I have personally found to be of value.

As lupus vulgaris stands foremost among tuberculous affections of the skin, and as other forms of cutaneous tuberculosis are amenable to a like treatment, we will begin with the local therapy of this disease.

All are agreed, I think, that three objects are to be aimed at in the local treatment of lupus. These are (1) the removal of the morbid tissue, (2) with as little pain as possible, (3) with the least resulting disfigurement. A brief consideration of various methods in vogue will perhaps show how they fulfil these respective indications.

The oldest remedy in the treatment of lupus and one still recommended by some surgeons, is the knife. This will certainly remove the disease when limited in extent, and with the modern improvements in skin-grafting, a patch of lupus of almost any size might be excised and the wound healed. But this cannot be accomplished without much dread and discomfort on the part of the patient, and where a plastic operation

[1] Read at the Annual Meeting of the American Dermatological Association in Washington, September, 1891, introductory to the discussion upon the treatment of Cutaneous Tuberculosis.

on the face is involved, the result is seldom satisfactory from a cosmetic point of view. The prevalent fear of the surgeon's knife may be irrational, but it exists, nevertheless, and, in spite of the favorable results reported by Hahn, Senger and others, in no case of lupus, large or small, is excision, in my opinion, preferable to other methods of treatment at our command.

The cautery, as commonly employed, is another agent, which I would unhesitatingly condemn. Acting equally upon healthy and diseased tissue, it must either produce an unnecessarily deep ulcer, or else the smooth, superficial and delusive cicatrix will soon appear studded with isolated nodules. Whether a Paquelin or galvano-cautery be used the operation is generally painful and the result either uncertain or disfiguring.

Doubtless the best method of employing heat in the treatment of lupus is that advocated by Besnier, and one which I must frankly confess, I have never fairly tested. This method consists in making punctate and linear scarifications by means of variously shaped needles, knives and buttons of platinum, connected with a galvano-caustic battery. Being sceptical as to the danger of general tuberculous infection resulting from blood-letting operations, such as scraping and scarification, I have failed to appreciate the advantages claimed by Besnier for his method of treatment.

The use of the flat electrode for the destruction of lupus tissue, as endorsed by Dr. G. T. Jackson, at the last meeting of our Association, I have tried repeatedly. There is no doubt as to the good result that can be obtained by this method, but the time required to effect the result is so great as to render the method of comparatively little value.

The curette is an instrument well deserving the high reputation it has acquired in the treatment of lupus. When used alone it is apt to prove insufficient to effect a cure. It usually removes the greater portion of the diseased tissue with ease, and when cocaine is injected or even applied on pledgets of cotton to the new surface, a large patch may be scraped with but little pain or discomfort to the patient. The healthy tissue remains uninjured, and a wound is left, which properly dressed, will heal speedily and leave a smooth cicatrix. The size and shape of the curette is largely a matter of taste, but the form of the Volkmann spoon can hardly be improved. For recurrent isolated nodules appearing in the cicatrix after a previous unsuccessful operation, and for the minute points of diseased tissue noted after multiple scarification, even the smallest curette is apt to prove too large.

Here a dental burr or a dental excavator can be used to great advantage. Indeed, whenever lupus appears in the form of disseminated nodules, burrs of varying size will be found greatly superior to a small curette. With such an instrument many small and deeply-seated nodules of lupus can be bored out which would escape the action of any scraping process. Since recommending the use of the dental burr six years ago in the *Journal of Cutaneous and Venereal Diseases*, I have used it many times and with the greatest satisfaction. Until quite recently I was unaware that Mr. Morris, of London, had previously devised a similar instrument for this purpose. This is a double-screw excavator in which the lacerating edges are arranged around a cone in the form of two parallel spirals. It is claimed that as the pitch of each spiral considered separately is double that of the single threaded screw, the cone can be inserted to its full depth with fewer turns of the instrument, thus reducing the duration of the operation and the suffering of the patient by fully one-half. It seems to me that this advantage is wholly theoretical and that the ordinary burr obtainable from any dentist or dental instrument dealer will fully answer the purpose.

As regards scarification in the treatment of lupus, too much, I think, has been said in its favor, while the objection raised against it, that it promotes the absorption of bacilli and leads to pulmonary tuberculosis is largely hypothetical. Linear scarification, as advocated by Squire and Vidal, is certainly an improvement upon the punctiform scarification employed by Dubini, Volkmann and Veièl. There is no doubt but that it will cure lupus in most cases, and leave the most satisfactory cicatrix, but this method of treatment involves usually an amount of time and patience which greatly lessens its value as a therapeutic measure. The only cases in which it is superior to other plans of treatment are those of ulcerating lupus of the nose. Here the curette and various applications which tend to remove the diseased tissue are liable to cause considerable deformity, and cause the patient to go through life with a misshapen or stumpy nose. Scarification, however, in such cases, while it gradually destroys the lupus, permits a new growth of connective tissue to take its place, which tends to preserve the size and form of this important feature. As Vidal has shown by microscopical observation, the lupus cells gradually alter their configuration and assume the shape of fibres of connective tissue, and, as Squire has claimed, the nose may often be actually rebuilt.

Of caustics and various applications which tend to destroy lupus tissue by virtue of their chemical effect, a long list might be given. All have proved of service in certain cases; few have manifested any remarkable and distinctive therapeutic value, while none have as yet found their way into general favor. I will merely mention nitrate of silver, caustic potash, chloride of zinc, lactic acid, ethylate of sodium, iodoform and aristol, and remark that in spite of time-honored usage or eminent recommendation, they possess no special value in the treatment of lupus, and in many respects are greatly inferior to remedies of which I shall presently speak.

The use of bichloride of mercury, on account of its bacillicide properties, has been advocated by Doutrelepont, Tausini, White and others. My own experience with this method of treatment has proved unsatisfactory, and the slight improvement which took place in a few cases appears to be due rather to a stimulating effect such as would follow its application to the nodules of acne or rosacea, rather than to any parasiticide action. The reported experience of others has been similar to mine.

Of the various substances applied to ulcerating lupus and to the curetted surface, with a view to the complete destruction of the lupus tissue, no one has perhaps met with greater favor than pyrogallol. This was introduced by Jarisch, who recommended a ten per cent. ointment to be applied twice daily, after thorough curetting of the patch. At the end of three to five days, or when the surface appears swollen and of a dirty grayish hue, iodoform is to be plentifully applied, which tends to check the pain produced by

the ointment. This is covered with linen smeared with boric acid ointment, and bandaged for several weeks, until the suppuration lessens and healing begins. Mercurial plaster is now applied, and after four or five weeks the same cyclus of curetting, pyrogallol, iodoform with boric acid dressing is repeated in order to prevent the return of the lupus in the form of miliary infiltration. Finally, the wound can be healed rapidly by skin transplantation.

For many years I have had more satisfactory results from a somewhat similar plan of treatment than from any other method which I have employed. I have, however, used a much stronger ointment of pyrogallol, varying from twenty-five to fifty per cent., which greatly shortens the duration and adds to the efficacy of the treatment. The application is sometimes quite painful for the first twenty-four or forty-eight hours, and may give rise to considerable inflammation of the part. But the continued use of the strong ointment soon produces a benumbing sensation in the locality to which it is applied, and no further complaint of pain is made until the ointment is discontinued and a simple dressing is substituted. This application, coinciding with the separation of the sloughing tissue, will often be regarded by the patient as more painful than the pyrogallol. When the dirty, brownish, pultaceous slough has separated and left a clean, raw surface, mercurial plaster may be applied, beneath which the ulcer will become converted into a smooth, pliable cicatrix. Or, if the raw surface be considerable in extent, Thiersch's method of skin transplantation may be employed with benefit. I have no hesitation in recommending this use of (1) the curette, (2) the strong pyrogallol ointment, and (3) the mercurial plaster as a most admirable method in the treatment not only of lupus but of rodent ulcer. It is a method which has many advantages and few objectionable features.

Salicylic acid is a remedy which experience has proved to be of service in the treatment of lupus and other forms of cutaneous tuberculosis as well as in many other affections of the skin. In a letter to the *British Medical Journal* in 1884, it is recommended in the treatmet of lupus vulgaris, by Dr. J. G. Marshall. In a paper published in the London *Lancet* in 1886, Unna advocates its use in most enthusiastic terms. He recommends the application of varying strength, but all containing two parts of beech tar creosote to one part of salicylic acid. The pain caused by the acid alone is very severe, and constitutes a serious objection to its use, but it is greatly mitigated by the anæsthetic action of the creosote, which Unna speaks of as the "morphine of the skin." The creosote has an antiseptic and bacillicide effect, and is therefore both corrigent and adjuvant to the salicylic acid. A strong plaster is at first applied to destroy the epidermic covering of the lupus tissue. Before the second plaster is applied to the raw surface, a solution of cocaine may be employed, which will temporarily deaden the pain, which in a short time yields to the more lasting anæsthetic effect of the creosote. The remedy leaves a smooth cicatrix, but according to Unna, redness of the scar is apt to persist for some time, owing to a paresis of the capillaries or destruction of the stratum granulosum.

I have used this combination of salicylic acid and creosote in an Irish-moss plasma, and so far, with satisfactory results, but my experience with it has not been sufficient to say whether or not it is equal in value to pyrogallol.

I will mention but one more local remedy which, in the case of one of my lupus patients at the New York Skin and Cancer Hospital, has produced a remarkably beneficial effect. The remedy is fuchsine. The patient, a man of about thirty-five years of age, had suffered from lupus of the right ear and neck for eight years. Surgical measures had been employed by one or two dermatologists with no marked results. Injections of Koch's lymph were employed for two months or more at St. Luke's Hospital, and although the reaction was characteristic, the patient was finally discharged with no apparent improvement. He now entered my service at the Fordham branch of the Skin and Cancer Hospital, where for the past three months the fuchsine treatment has been faithfully carried out by Dr. A. C. Lewis. The surface of the affected skin or a portion of it has been very superficially scarified with a scalpel twice a week, and a one per cent. alcoholic solution of fuchsine painted over the part. The treatment has been almost painless, but nevertheless the elevated lupus tissue has completely flattened, and now only dull red patches are to be seen. The prospect of an absolute and speedy cure in this case seems quite encouraging.

The constitutional treatment of cutaneous tuberculosis may be conveniently divided into the specific and non-specific, the former aiming at a direct action upon the morbid growth, the latter merely improving the general condition of the patient and thereby modifying the soil upon which the tuberculosis is implanted.

Despite the vagueness of the term there is certainly such a thing as scrofula. It is an inherited or acquired condition of certain tissues, which leads to the development of definite and characteristic symptoms. It doubtless renders the subject of this diathesis especially liable to the engrafting of tuberculosis in the strict sense of this term. Although no one can assert that cod liver oil or iodine or the hypophosphites have ever produced the slightest direct effect upon lupus or other tuberculous lesions, there is no question as to the value of these remedies in combating the scrofulous diathesis. In the therapy of cutaneous tuberculosis, these remedies may therefore be justly considered as prophylactic, and clinical observation has repeatedly shown that in certain cases they are a valuable and often indispensable adjuvant to local measures. Without discussing this subject at length, I would merely take this opportunity of expressing my firm belief in the value of iodide of starch as a reconstructive agent in all cases of struma, whether tuberculosis be present or not. In 1880, McCall Anderson advocated the use of this remedy in erythematous lupus, and strangely enough implied that it was of no value in lupus vulgaris. His formula consisted of twenty-four grains of iodine to an ounce of starch, the iodine to be triturated with a little water, and the starch to be added slowly, the mass to be dried by a gentle heat, and kept in a close-stoppered bottle. By use of this remedy, he claimed that the largest amount of iodine could be most easily introduced into the system. I have used this remedy freshly prepared, with great satisfaction, and I think with great benefit, not only in cases of lupus vulgaris, but in many cases of acne occurring in lymphatic subjects, and also in cases where chronic syphilis is combined with struma.

We come now to the specific treatment of cutaneous tuberculosis, and the method promulgated a year ago by Robert Koch, is the only one which seems worthy of discussion. As to the precise action of tuberculin in tuberculous and healthy subjects, there are many questions of greater or less scientific importance which as yet remain unsettled, but sufficient time has elapsed and sufficient experience has been acquired to enable an unprejudiced student of therapeutics to form at least an opinion, if not a definite judgment, upon this novel method of treatment.

In Europe, according to the various published reports, a most remarkable diversity of results has followed the employment of lymph injections in the treatment of tuberculosis. As geographical locality can certainly exert no influence upon the therapeutic method in question, and as men of science profess to acknowledge but one brotherhood and one Fatherland, it is simply astounding that such conflicting observations should have been made upon different sides of the Rhine. While some will explain this diversity of opinion by reference to national pride and national enmity, others may perhaps conclude from a study of the published reports, that Koch's lymph is a divine remedy for the tuberculous German, but sure death to the tuberculous Frenchman.

In this country the introduction of Koch's method has been followed by a most decided reaction. The public press, which went fairly wild over the startling novelty, would now scarcely devote a paragraph to a dispassionate statement of its value. The numerous members of the profession who thronged our public hospitals and gazed in awe at a simple hypodermic injection, or offered fabulous prices for a few drops of the lymph, are now busied with newer remedies, and would not buy the lymph if it were offered at ten cents a gallon. But this does not in the least affect the question as to whether tuberculin is or is not a remedy of practical value in the treatment of tuberculosis.

The experience of physicians in this country, where national feeling plays little or no part in determining the final judgment in the matter, ought to prove of exceptional value, and the expressed opinion of members of this Association, however various it may be, will doubtless serve to mould medical opinion on this side of the Atlantic.

My own experience in the use of tuberculin has been limited to a few cases in my service at the New York Skin and Cancer Hospital, including lupus vulgaris, lupus erythematosus, sarcoma and leprosy, while a few more of my patients were kindly treated for me by Dr. Kinnicutt, at St. Luke's, and Dr. Bailey, at the Post-Graduate Hospital. These include cases not only of both forms of lupus, but also of eczema, epithelioma, and syphilis. I need not give detailed histories of any of these cases, but will simply speak briefly of the general results attained and conclusions formed. None of the alarming effects reported by many others occurred among my cases, probably from the fact that I limited myself to the use of small doses, injecting one milligramme, or even less, at the outset, and rarely increasing the dose above ten or fifteen milligrammes. In one very nervous patient with erythematous lupus of the cheeks, the first injection was followed by an attack of hystero-epilepsy, the patient having a series of rather severe opisthotonotic convulsions during the succeeding twelve hours. That the lymph, however, was not the direct cause of these unexpected symptoms, was proven later by a series of milder convulsions which followed the injection of pure water. A somewhat remarkable subnormal temperature followed the second or third injection in a case of leprosy of the tubercular type, the house-physician asserting that the careful use of a reliable thermometer showed the figure to be 94°.

In my lupus cases, to which I shall restrict my remarks, the local and general reaction occurred in a characteristic but mild form, but with the exception of two cases, no decided curative effect was produced. In one of these, vigorous curetting had been employed a short time before, and the cheek presented a group of pinkish nodules which were largely cicatricial in character. Reaction occurred after the first injections and then ceased. In this case, though the patient was discharged as cured, but little if any credit could justly be awarded to the action of the lymph.

In another case, of a young woman whom I had treated for lupus of the nose, simply with the dental burr and without affecting a complete cure, a steady and decided improvement occurred from injections made at the Post-Graduate Hospital. The small nodules flattened and disappeared, leaving only a congested cicatrix, and a few suspicious points. During the past few months, however, in which I have done nothing but watch the case with interest, these suspicious points have faded, and the lupus now appears to be permanently cured. This patient might have been more speedily cured by curetting and the use of pyrogallol or salicylic acid, but a more noticeable scar would doubtless have been left.

In other cases of lupus under my care or observation, no approach to a cure occurred in spite of numerous repetitions of both local and general reaction. When reaction ceased altogether, and the lesions appeared as prominent or even more so than at the outset, it was natural to conclude that no good had been accomplished and that Koch's method, in these cases at least, had proved a failure. I wish to condemn such a hasty conclusion, for I believe that good results have been accomplished in some cases, although they were not apparent upon the surface. The first case of lupus injected in New York was a young woman with a patch involving the ear and a portion of the cheek. She had been treated for several months at the Skin and Cancer Hospital, with but slight improvement, and was placed in Dr. Kinnicutt's care at St. Luke's, for lymph treatment. For a month the prospects of a speedy cure were brilliant, as the reactions were typical and decided, and improvement began to manifest itself. Reaction then ceased, no further improvement occurred, hope gave way to discouragement, and after about three months the patient was sent back to me. I now resumed the previous surgical treatment with the burr, and found that the lupus tissue beneath the surface had been softened to such a degree that it could be much more readily destroyed. The patient is now about well, and although the treatment may have been a trifle more energetic than before the lymph was used, I am convinced that the present successful result is largely due to its beneficial effect.

Another case of long-standing lupus treated at St. Luke's, was finally discharged and sent to me with a note from Dr. Kinnicutt, saying that there was no reason for pursuing the treatment by injections of lymph. This is the case to which I have already referred as being nearly well under the fuchsine treat-

ment. As fuchsine has been used in lupus without success, I am inclined to believe that the notable effect produced in this case may be due in some measure to a change in the lupus tissue produced by the injections.

In the great hospitals of Paris, Vienna and Berlin, Koch's remedy has been tested upon a more extensive scale than in this country, and observations have been made with the greatest care. In this great trial involving the question of life or death, to a large proportion of suffering humanity, it may be said that the jury has disagreed. A commission of eminent physicians of the Hôpital St. Louis, after an experience based upon the treatment of fifty cases, has reported in terms of unqualified condemnation. Kaposi, in Vienna, after an experience in fifty cases (thirty-five of which were lupus vulgaris), reports that many unpleasant general effects were produced by the injections. Though reaction occurred in non-tuberculous cases, it was not as prompt, intensive and constant as in lupus vulgaris. In this disease the lymph worked promptly in producing a superficial, temporary inflammation, followed by a notable flattening, loss of color, and improvement within a few weeks. But no cure was effected. He asserts that the lymph will not take the place of other remedies, upon which reliance must still be placed, and adds that it remains yet to be determined in what manner and to what degree a methodic alternation and combination of Koch's method with those previously employed, may prove advantageous in the therapy of lupus. Neumann states that in the majority of cases repeated injections exert a specific action upon lupus tissue, obtained by no other method of treatment heretofore employed, and the use of the lymph in certain cases of lupus produces an improvement, and in many localities effects a cure. He adds that from henceforth no specialist will fail to test tuberculin before resorting to the old methods of cauterizing and scraping, and claims that with no other method has he succeeded in four months in effecting such an improvement in certain cases as has resulted from the lymph injections. In the official report of the Prussian Universities on the action of Koch's remedy for tuberculosis, favorable reports are received from the dermatological clinics. Doutrelepont, of Bonn, says: "Our observations fully confirm the statements of Koch. . . . Our lupus cases all heal under the use of Koch's remedy. . . . The treatment of tuberculosis by Koch's lymph is to be considered as one surpassing all previous methods, both as to the length of treatment and the beauty of the resulting scars."

When doctors disagree, who shall decide? In default of a unanimous verdict from such authoritative sources as have been mentioned, it remains for each to test Koch's remedy for himself, and to arrive at an independent conclusion.

A new terror of courtship has been developed in the case of an Indiana brunette. For some days she had suffered from a supposed attack of pleurisy, but when Dr. S. F. Bordman was called in he found that one of the young lady's ribs was fractured. After much questioning, the girl blushingly admitted that her best beau had inflicted the injury while giving her his usual tender embrace before parting on his last visit. The occurrence of the accident was marked by a sharp pain in the side, a "catch in her breath," and a sudden relaxation of her hold.

Reports of Societies.

AMERICAN DERMATOLOGICAL ASSOCIATION.

The Fifteenth Annual Meeting was held at Washington, September 22–25, 1891, in conjunction with the Congress of American Physicians and Surgeons.

FIRST DAY.

The meeting was called to order by Dr. F. B. Greenough, of Boston, who made the

OPENING ADDRESS.[1]

The Report of the Committee on Nomenclature was made, and after discussion was accepted.

The first paper read was by Dr. H. G. Klotz, of New York, entitled

DERMATITIS HÆMOSTATICA.

It was discussed by Drs. Piffard and Bronson.

Dr. L. A. Duhring, of Philadelphia, followed with a paper

REPORT OF A CASE OF UNIVERSAL ERYTHEMA MULTIFORME.

It was accompanied by a colored portrait of the case and specimens of large plates of exfoliated epidermis shed by the patient during the latter part of the course of the disease. It was discussed by Drs. Hyde, Duhring, Sherwell, Shepherd, Fox, Allen and Bronson. Dr. Shepherd asked if any drug had been administered for the rheumatism that was a marked feature in the case, to which Dr. Duhring replied, "No! The treatment had been entirely negative." Dr. Fox had seen a case somewhat resembling that of Dr. Duhring, in which there was a question if the eruption had been caused by some drug that had been taken for a co-existing gonorrhœa. He thought that it was a purely accidental occurrence. We often see cases of dermatites exfoliation following other diseases such as psoriasis.

Dr. Shepherd, of Montreal, then read a paper upon

AN UNUSUAL CASE OF SARCOMA, INVOLVING THE SKIN OF THE ARM, REQUIRING AMPUTATION.

This was followed by a paper by Dr. S. Sherwell, of Brooklyn, upon

MULTIPLE SARCOMATA. HISTORY OF A CASE SHOWING MODIFICATION AND AMELIORATION OF SYMPTOMS WITH LARGE DOSES OF ARSENIC.

The author after pointing out numerically several interesting points, chief among which were, largeness of therapeutic dosage, tolerance of them by patient, complete and rapid subsidence of tumors under such dosage, rapid recurrence under suspension of same, originality of treatment instituted, etc., goes on to give a history of the patient with sarcomata, supplemented with a further history by Dr. John B. Wheeler, of Burlington, Va.

Dr. Sherwell removed in all from this patient thirty growths, some of which were quite large, one three and a quarter inches in diameter; Dr. Wheeler, about a year later, in a series of operations, removed the immense number of one hundred and seventy, large and small. In the interval between his leaving Dr. Sherwell's care and coming under that of Dr. Wheeler,

[1] See page 369 of the Journal.

he had interrupted or almost suspended treatment spoken of above, which had at the time of his leaving Dr. Sherwell caused the complete or almost complete disappearance of all growths. They recurred too rapidly for Dr. Wheeler to operate, when he adopted the same internal treatment as that which Dr. Sherwell had instituted, with the most decided and gratifying results, namely, the same rapid disappearance of the growths. The case ended by his leaving Dr. Wheeler's care in good condition, and doing exceedingly well, irregularity or total interruption of treatment, and, as before, recurrence of growths, followed in a few months by death.

In the discussion, Dr. Zeisler mentioned brilliant results in a case of lupus sarcoma, for the administration of arsenic. In a case of pigmentary sarcoma, he had given the drug without effect. Dr. J. C. White, of Boston, had seen good effects from use of the drug in one case of sarcoma. Dr. Robinson, of New York, had not had much success with arsenic. He believed that many cases of multiple sarcoma were in reality microbean in origin and not true tumors.

The next paper read was by DR. R. B. MORISON, of Baltimore, on

THE HYPODERMIC USE OF HYDRARGYRUM FORMAMIDATUM IN SYPHILIS,

which he recommended as a treatment of great usefulness, especially as a means to fall back upon in some cases in which older forms of treatment did not succeed, or in which such a plan as that of inunction was not practicable. He always used Merck's preparation and found that it did not cause much pain nor prove objectionable. He had never used any of the insoluble salts. In the discussion, Dr. Corlett said that he had found hypodermic injections of mercury of great use in some cases, such as in those cases in which the stomach has given out. Dr. Klotz had employed hypodermic injections in syphilis. While it was doubtless of value in some cases, for most cases older methods of treatment are quite as good. Dr. Greenough said that while greatly interested in the subject of hypodermic medication in syphilis, he had found it impossible to get his patients to submit to it. He thought it was useful only in exceptional cases in which other plans could not be used. Its ultimate result was no better than that of other plans.

DR. J. GRINDON, of St. Louis, read a paper upon

LICHEN SCROFULOSORUM,

which gave rise to a long discussion. Drs. Robinson, Piffard, Sherwell, Shepherd, Corlett, Bronson, and Greenough, all had seen cases of this rare disease.

SECOND DAY.

The Committee on Statistics made its report through its chairman, DR. J. N. HYDE, of Chicago.

This was followed by a discussion on

TUBERCULOSIS OF THE SKIN,

which was opened by DR. J. C. WHITE,[2] of Boston, who presented "Its Clinical Aspects and Relations"; by DR. J. T. BOWEN,[3] of Boston, who presented "Its Pathology"; and by DR. G. H. FOX,[4] of New York, who presented "Its Treatment." In the discussion, Dr. H. G. Piffard drew attention to the fact that French and other competent observers had surmised the connection between what was then called pulmonary consumption and lupus and the so-called scrofulodermata. He himself had done so in 1876. Recent invention of the Abbe condenser and Zeiss lenses had enabled us to discover the tubercle bacillus, and to establish the relationship on pathological grounds. He himself believes that lupus erythematosus is fully entitled to the name "lupus," as he thinks that it, too, is of bacillary origin. Nor is he alone in his opinion. Cold abscess of the skin is probably due to the same cause, as is also rodent ulcer. He would agree with Dr. White in believing that we should have some collective term for all the various tubercular diseases. In treatment he would advocate cutting out the whole diseased patch, unless it was very extensive. Next to the knife he would place the actual cautery, after removal of as much as possible of the growth with the curette. Arsenic and chloride of zinc are also to be depended on.

Dr. C. W. Allen commended multiple scarification; and combined pyrogallol and mercurial plasters; he thought that there might yet be a future for Koch's tuberculin.

Dr. J. Zeisler was in thorough accord with Dr. White. By his experience at the Hôpital St. Louis, he had become converted to the use of the galvanocautery. He would also testify to the efficacy of the solid nitrate of silver stick, which, bored into the skin, would act both as a knife and caustic. He was not enthusiastic as to tuberculin.

Dr. E. B. Bronson believed that it was best to retain for some time our present terminology for the different tubercular diseases. In regard to tuberculin, he had seen improvement in some cases treated with it, but on the whole his experience had made him regard the remedy unfavorably. He had had good success with the dental burr, as first advocated by Dr. G. H. Fox. The nitrate of silver stick was also good.

Dr. J. N. Hyde was glad that Dr. White had come to accept local contagion as the cause of lupus, a view that he himself was among the first to advocate. He thought that in this country there were but few cases of lupus with a history of pulmonary tuberculosis in the family, or with tubercular diseases elsewhere. He did not believe in the treatment by scarification. Both the curette and nitrate of silver were serviceable in proper cases. In regard to tuberculin, he thought it possible that in time we might find something of value in it, but it was not so now.

Dr. L. A. Duhring would retain the old names for some time to come. He had not found lupus associated with general tuberculosis in private practice. He would recommend pyrogallol most highly, using it in the form of a plaster with resin and soap plaster, three of the resin plaster and one of the soap plaster. This is to be worn continuously. Local use of bichloride of mercury he had not found beneficial. Tuberculin he had found helpful, though he did not report any case of cure.

Dr. P. A. Morrow would agree with Dr. White that as lupus and some other diseases had a common etiological factor, we should place them together under a common heading. He advocated the use of multiple scarifications followed by mercurial plaster. For destruction of the small lupus nodules he recommended punctate cauterization with a white-hot instrument. Chloride of zinc was superior to pyrogallol as a caus-

[2] See page 509 of the Journal.
[3] See page 516 of the Journal.
[4] See page 521 of the Journal.

tic. Excision will probably increase in favor as the means of treating lupus.

Dr. A. R. Robinson would not include lupus under a common heading with tuberculosis on account of its different clinical aspect.

Dr. H. G. Klotz was not yet satisfied with our present knowledge of the infection of the skin with bacillus tuberculosis.

Dr. L. D. Bulkley is not satisfied with any of the plans for the external treatment of lupus. Internally, he has great faith in phosphorus as a curative agent, the nodules softening up and disappearing under its continuous use. He would corroborate Dr. Fox's advocacy of fuchsine. As to pyrogallol, that, too, was admirable. He applies it in powder form, pure, after scraping. Salicylic acid combined with pyrogallol, is also useful.

Dr. S. Sherwell was doubtful of the relationship of tuberculosis to lupus.

THIRD DAY.

Dr. Duhring read a paper upon

NOTES OF A VISIT TO THE LEPER HOSPITAL OF SAN REMO, ITALY.

In reply to a question by Dr. White, after the paper was read, he replied that no attempt at segregation was made in San Remo. There were but few cases in the Hospital, and they were in an ordinary ward of a general hospital. They were not permitted to leave the confines of the hospital.

Dr. P. A. Morrow, of New York, then followed with a paper on

SKIN GRAFTING,

and showed a case in which the operation had been done by the method described by him, and with admirable results.

In the discussion of the case Dr. Duhring spoke in high praise of the operation of skin grafting as practised by Dr. Jas. E. Garrettson. Dr. Clarke asked if Dr. Morrow thought that the inclusion in the graft of the deeper structures of the skin, as recommended by him, would give any better results than more superficial ones. To this Dr. Morrow replied that he thought they would be more certain to take, and he had not had a single failure. He had made more than fifty grafts of hairy skin upon a cicatricially bald scalp, and all of them had taken, and from many of them the hair was growing nicely. Dr. Sherwell had had good results also, by deep grafts.

Dr. P. A. Morrow, of New York, then read a paper on

THE TREATMENT OF ALOPECIA AREATA,

and was followed by Dr. L. D. Bulkley, of New York, with a paper on

A THERAPEUTIC NOTE ON ALOPECIA AREATA.

The two papers were discussed together. Dr. J. Zeisler believed alopecia areata was due to a parasite, though there were some cases due to a neurosis. The latter were the very obstinate ones. He was in favor of treating all cases by epilation about the patches. With pilocarpine he had had no success. He regarded the use of a concentrated solution of common salt as a good remedy for stimulating hair growth.

Dr. W. T. Corlett spoke in favor of acetic acid as a remedy in alopecia areata. Cases, however, recovered spontaneously.

Dr. G. H. Fox was always pleased to hear any one speak with confidence of any treatment of alopecia areata, as Dr. Bulkley had done of carbolic acid. He was rather sceptical of any remedy. A strong solution of ammonia had proved as effective as any in his hands. He thought that general treatment of the patient was quite as important as any local application. Dr. J. E. Graham had never seen any cases that would lead him to believe that alopecia areata was contagious. He did not think that because antiparasitic remedies were useful, that this was a proof of the parasitic nature of the disease. Dr. P. A. Morrow thought that there had been a sufficient number of cases of contagion reported to satisfy any reasonable doubt of the contagiousness of the disease. He quoted Eichhoff's report, in which a number of cases were traced to one barber. He had had one case of probable contagion.

Dr. L. A. Duhring said that, in spite of a great deal of study of alopecia areata, he had never been able to find any parasite in the disease, nor to be convinced that the disease was contagious. He believed that there was a disease simulating alopecia areata, and often reported as such, that sometimes occurred epidemically, but was not alopecia areata. He regarded arsenic taken internally as very valuable in the treatment of the disease. He could see no reason for depilitating the healthy hair about the patches.

Dr. J. C. White said that we were still wanting positive evidence of both the parasitic and the neurotic element in the etiology of the disease. Clinical evidence points both ways. He had seen cases of apparent contagion. He had seen thirty cases of a disease simulating alopecia areata, and that were not cases of ringworm, occurring in an asylum which probably were instances of the so-called contagious alopecia areata. He did not think that they were true alopecia areata. His favorite remedy was half a drachm of croton oil to eight ounces of turpentine used daily. Of course it failed in some cases, as do all remedies. If it failed, he used many other remedies that had been commended, but they did not do any better. He did not believe that there was any specific remedy.

Dr. H. W. Stelwagon had never been able to trace a case to a contagious origin. Local stimulation is more to be relied on in treatment. He was fond of equal parts of turpentine, cantharides and tincture of capsicum, with arsenic internally.

Dr. J. N. Hyde believed that the time would come when alopecia areata would be regarded as simply a symptom. Some cases were doubtless parasitic and some neuritic in origin. In bad cases he used creosote locally. After, say the forty-fifth to the forty-eighth year of life the chances of recovery were greatly decreased.

Dr. H. G. Klotz had had one case in which hereditary syphilis was probably the underlying cause, the boy getting better when under specific treatment.

Dr. C. W. Allen believed that the disease was parasitic, and thought that he had in his own practice observed a case of contagion. He thought that internal treatment was valuable. Naphthol and pyrogallol had both proved useful in his hands.

Dr. S. Sherwell believed the disease to be of neuritic origin alone. Stimulation was most to be depended on.

Dr. J. Grindon had never met with a case that suggested either a parasitic or contagious origin of the disease. He believed in its trophoneurotic origin.

Dr. F. B. Greenough used in practice a half-drachm of carbolic acid in an ounce of water.

Dr. L. D. Bulkley in reply to a question of Dr. Morrow, said that he used the ninety-five per cent. solution of carbolic acid only to a small portion of the scalp at a time. It should be brushed over lightly at first so as to benumb sensibility, and then rubbed in more thoroughly. He had not used it elsewhere than on the scalp. The skin is red for a few weeks; this disappears and the hair grows. He also administers strychnia and phosphoric acid, and keeps up the nutrition of the patient.

DR. R. W. TAYLOR, of New York, read an account of a case of

ANGIOMA PIGMENTOSUM ET ATROPHICUM,

by DR. A. W. BRAYTON, of Indianapolis. It was accompanied by an excellent portrait.

Dr. J. C. White stated that his investigations showed that the disease was not limited to Russian Jews, but was met with also in persons of English and French descent.

DR. BRONSON then read his paper upon

THE ETIOLOGY OF PRURITUS.

The afternoon session began with a short discussion of Dr. Bronson's paper on pruritus, in which Drs. Zeisler and Morrow took part, the discussion being closed by Dr. Bronson.

Dr. W. T. CORLETT, of Cleveland, then read a paper upon

DISEASES OF THE SKIN, ASSOCIATED WITH DERANGEMENT OF THE NERVOUS SYSTEM.

It was discussed by Drs. Bronson, White, Fox, Duhring, Zeisler, Allen and Sherwell, who took various views of the cases reported, all agreeing that it was very difficult to diagnose what the cases were without having seen them.

DR. L. A. DUHRING read his paper entitled,

EXPERIENCES IN THE TREATMENT OF CHRONIC RINGWORM IN AN INSTITUTION FOR BOYS.

He recited the many remedies he had used. In the discussion Dr. G. H. Fox said that Dr. Duhring's experience was both interesting and valuable. He had had considerable experience in the New York Skin and Cancer Hospital. He had found chrysarobin useful, as had Dr. Duhring. He began the treatment by clipping the hair short, and shaving, either only over the patches or over the whole scalp and applying chrysarobin in traumation. He was tired of greasy applications. Hydronaphthol plaster, as recommended by an European physician, had proved more satisfactory than chrysarobin. He advocated epilation where practicable.

Dr. J. Zeisler advocated pyrogallol as a parasiticide. Dr. Duhring, in reply to a question, said that some of the cases recovered in six weeks, and some not for a year. Dr. White thought that white chrysarobin was a good remedy; it was not a safe one to use outside of an asylum or hospital. He recommended a combination of sulphur, carbolic acid and naphthol in ointment form. Dr. Stelwagon recommended an ointment composed of tar, sulphur and citrine ointment. Dr. Sherwell advised keeping the scalp saturated with a mild oil, and covered by a skull cap. Dr. E. Wigglesworth believed that it is necessary for us to have regard to the nutrition of our patients. Dr. C. W. Allen bore testimony to the value of chrysarobin. Dr. L. A. Duhring, in concluding, said that the cases were all well when he left off treatment and that they remained well for at least one year. Epilation he found did not repay the vast amount of labor it cost. He regarded ointments as most useful remedies.

DR. J. ZEISLER, of Chicago, then read his paper on

EPILATION; ITS RANGE OF USEFULNESS AS A DERMATO-THERAPEUTIC MEASURE.

In the discussion, Dr. G. H. Fox said that he was glad to hear any one advocate epilation in sycosis, as he had found it a most useful remedy. A sulphur paste after epilation is valuable. He had not found epilation so promptly curative as had Dr. Zeisler, while he laid more stress on diathetic management than did the latter. He was sure that epilation was useful in some cases of chronic ringworm of the scalp. Dr. H. G. Klotz spoke also in favor of epilation in sycosis, though he had cured many cases without it, notably with mild naphthol ointments. He thought epilation to be valuable in syphilitic lesions about the hairs, as well as in all the pustular affections implicating the hair. Dr. L. A. Duhring had not been able to practice epilations on his patients on account of the pain it caused, specially on the upper lip. He could not see much use in depilating in alopecia areata when the hairs were firm about the patch. Dr. P. A. Morrow said that he did not think that it was necessary to pull out all the hairs about the bald patches, but it was a good thing to make traction on all of them and to remove all that were loose. Epilation was a requisite in all rebellious cases of trichophytoses. If the hair is removed by a quick sudden movement, the operation is nearly painless. Dr. H. W. Stelwagon believed that many cases of sycosis could be cured without epilation. He would speak in special praise of Fleming's solution in trichophytosis, diluting it at first one part to five or six of water, and gradually increasing the strength, to just short of marked irritation. Dr. S. Sherwell spoke of the connection between catarrhal conditions of the nose and sycosis of the upper lip. Dr. J. N. Hyde said that the last time he was in London and Paris he had observed that epilation was quite generally practised about the patches of alopecia areata. In closing, Dr. Zeisler said that when epilation was properly performed it was almost painless, as he regards alopecia as a parasitic disease spreading at the periphery he epilated about the patches to stop their spreading.

FOURTH DAY.

The first paper was by DR. J. E. GRAHAM, of Toronto, upon

MOLLUSCUM CONTAGIOSUM.

Dr. Bowen said that there was little question but that the disease was contagious. It is still unproven whether certain bodies found in molluscum are or are not coccidiac. Dr. Allen had no doubt about the contagiousness of the disease and related cases of the disease spreading in an asylum from one case. Excision is never necessary. They can readily be squeezed out, and then lightly touched with a caustic. He believed in their parasitic origin. Dr. E. Wigglesworth likewise cited a case of contagion. Dr. J. C. White, while believing that molluscum was contagious, was not prepared to accept the psorosperm as its cause. Dr. J. N. Hyde pointed out that in the statistics for the year just closed, seventeen cases of molluscum contagiosum

were reported, namely, nine from Boston, five from New York, two from Chicago, and one from St. Louis. Dr. F. B. Greenough believed them to be contagious. In treatment, he simply bores them out with nitrate of silver stick. Dr. S. Sherwell concurred in the belief of their contagion. Dr. J. E. Graham thought from evidence so far brought forward that the so-called psorosperms were simply degenerated epithelial cells.

Dr. J. N. Hyde, of Chicago, then read an interesting paper,

NOTE RELATIVE TO PEMPHIGUS VEGETANS.

In the discussion, Dr. L. A. Duhring said that he had had the opportunity of seeing the case described, and would corroborate what Dr. Hyde had said of it. It certainly was more of the nature of pemphigus than anything else. Dr. Bowen had seen a case of Neumann's in Vienna, and this one brought that one back very vividly to his mind. He regarded the term "pemphigus" as a most indefinite one, and thought that it gave very little idea of the pathology of the case under discussion. Dr. S. Sherwell had seen a case with analogous symptoms in a woman, which was cured by ovariotomy. Dr. J. E. Graham related the history af a similar case of his own. It became much better under arsenic, but suffered a relapse. Dr. J. N. Hyde, in closing, said that in his case there was no disease of the ovaries. He regarded the prognosis in his case as not good.

Dr. H. W. Stelwagon, of Philadelphia, then read his paper on

A STUDY OF MYCOSIS FUNGOIDES.

It was discussed by Drs. Hyde, White, Hartzell, Bowen, Duhring, and Fox. Dr. Hartzell emphasized the infectious nature of the tumors, and thought that we must look to inoculation experiments for its proof. Dr. Bowen spoke of the disagreement among pathologists in regard to the exact nature of the tumors. Dr. Duhring said that the disease was a general one of the skin, and did not seem to affect other organs to any extent. He believed it to be an infectious disease. It may be regarded as on the border line between an inflammatory new growth and a tumor. Dr. Fox related a case of apparent infection of the disease in the New York Skin and Cancer Hospital. He also spoke of the early diagnosis of the disease, and reported a case that at first looked like an exzema marginatum, but afterwards developed the characteristic tumors. Dr. Stelwagon, in closing, said that he found, in looking up the literature of the disease, some fifty or a hundred reported cases. It was exceptional for the disease to begin as tumors.

Dr. M. B. Hartzell, of Philadelphia, then read a paper on

LYMPHANGIOMA CIRCUMSCRIPTUM, WITH REPORT OF A PECULIAR CASE.

This paper was discussed by Drs. Stelwagon and Bowen.

Dr. H. G. Klotz, of New York, followed with a paper:

REMARKS ON CARBUNCLE, WITH REPORT OF A PECULIAR CASE.

It was discussed by Dr. Bowen, who spoke of the remarkable paper by Dr. Warren, of Boston, describing the pathological anatomy of the disease.

Dr. C. W. Allen, of New York, then made some remarks on

ERYTHEMA ET NÆVUS NUCHÆ.

Dr. Zeisler thought it probable that erythema nuchæ was often due to pressure and rubbing. Drs. Fox, Duhring, Grindon and White also took part in the discussion.

Dr. M. Grindon, of St. Louis, read a paper on

A CASE OF LICHEN RUBER.

Dr. Zeisler would be inclined to view the case as one of lichen planus. In this disease plantar and palmar thickenings are apt to form. Arsenic often cures these patients. Dr. S. Sherwell agreed with Dr. Zeisler in his diagnosis, though the case presented many exceptional features: one especially being the involvement of the nails. Dr. White believed the case to be one of lichen planus, and spoke of the uncertainty surrounding the whole question of the lichen group. Dr. Hyde said that he always found the polygonal outline of the papules to be well marked, something that does not seem to be familiar to the Germans and French. Dr. Duhring agreed with the previous speakers in this diagnosis. The polygonal shape and umbilication are often wanting.

Recent Literature.

An Illustrated Encyclopædic Medical Dictionary. Being a dictionary of the technical terms used by writers on medicine and the collateral sciences, in the Latin, English, French and German Languages. By Frank P. Foster, M.D., Editor of the New York Medical Journal, with eleven collaborators. Vols. I and II. With illustrations. New York: D. Appleton & Co. 1888 and 1890.

The title-page gives some idea of the scope of this work, and the promise of the title-page falls short of rather than exaggerates the performance of the pages between the covers. The publishers announce four volumes, and, if the other volumes are carried out with the fulness and thoroughness of the first two, it will be indeed a monumental work. Certainly there is no medical dictionary in the English language which can be compared to it. The paper and type are excellent. The size of the page is a quarto. There are 752 pages in the first volume and 1544 pages in the second. The number of subheadings under some of the long articles is almost bewildering. Under *abductor* there are 34 subheadings, under *abscess* 101, under *acid* 119, under *agaricus* 315, under *alcohol* 242, under *ammonium* 499, under *aqua* 568, under *artery* 1770, *bacillus* 259, *bath* 254, *bone* 414, *bursa* 321.

It is claimed, and its use indicates that the claim is just, that this dictionary is not a mere compilation from other medical dictionaries, but is founded on independent reading; the sources of information are given, and constant references to recent medical literature show an effort to keep pace with advances in medical science.

The full pronunciation of words is given. The illustrations are numerous, and, as a rule, excellent.

A review of such a work in a weekly journal is out of the question. A mere perfunctory notice is of little value. Our observations are the result of a good deal

of use of both volumes. We allow ourselves to express the hope that the work may be finished before long and within the proposed limits of four volumes, and that without lowering the standard of excellence reached in the volumes before us.

A Guide to the Clinical Examination of the Urine. By FARRINGTON H. WHIPPLE, A.B. (Harv.). Boston: Damrell & Upham. 1891.

Guides of this character have multiplied of late with great rapidity. This new addition to the list does not, in our opinion, fill any important gap in this branch of medical literature. In certain respects, it compares favorably with other works of the same class, and would be deserving of some praise were it not for the numerous inaccurate and inexact statements which it contains. It is stated for example, that when tyrosine is ingested by the healthy individual, his urea is increased by just so much nitrogen as was contained in the amount of tyrosine taken into the system; that the skilled observer is enabled, by the microscopic examination of blood, to determine from what animal the blood in question was derived; that the only means of distinguishing ordinary lactic acid and sarcolactic acid lies in the fact that the latter forms salts with zinc and calcium; that calcic oxalate occurs only in acid urine, etc. Other examples might be given. Mr. Whipple has, we believe, made the mistake of rushing into print before acquiring that exact knowledge and experience which one should possess before attempting a work of this kind.

We presume that books of this character will be written as long as there is a demand for them; and this is likely to exist as long as there are students who desire to pass their examinations without possessing any real knowledge of the subject. We believe that examiners can most effectually check this demand by refusing to pass students whose books present evidences of this method of preparation. W. B. H.

Syllabus of the Obstetrical Lectures in the Medical Department of the University of Pennsylvania. By RICHARD C. NORRIS, A.M., M.D. Second Edition. Philadelphia: W. B. Saunders. 1891.

"The design of the book is to secure for the student a logical and consecutive outline of his work, and to aid him in classifying the knowledge he acquires in the lecture-room."

The syllabus first appeared in 1890; and the call for a second edition, eighteen months later, is a sufficient evidence of its usefulness. Some new material has been added, particularly in the chapters on Infant Feeding, Pathology of the Puerperium, Obstetric Operation, and Dystocia. An index has also been prepared, and blank pages has been interleaved for additional notes. The book will doubtless find a continued usefulness in the student's hands.

Essentials of Pathology and Morbid Anatomy. By C. E. ARMAND SEMPLE, M.D. Philadelphia: W. B. Saunders. 1889.

This is one of a series of question compends which are "specially intended to assist students to put together the knowledge they have already acquired by attending lectures." If this is the case, the students who have to listen to lectures of which this book gives the essentials, have our pity. For it is simply a rehash of Green and other old English works on pathology, by a man who is a book-maker and not a pathologist.

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RECENT EXPERIMENTS WITH THE PNEUMOCOCCUS OF PNEUMONIA AND ITS TOXINE AND ANTITOXINE. THE POSSIBILITY OF CONFERRING IMMUNITY IN ANIMALS AND EVEN IN MAN.

G. AND F. KLEMPERER[1] have published a memoir in which are detailed some important recent experiments the practical outcome of which may possibly be of some real therapeutic importance.

The directing idea which guided these German investigators in their experiments was the following: It is known that in most cases pneumonia after having, during from five to seven days, caused grave general symptoms, terminates abruptly by crisis. In the space of a few hours, the temperature falls to its normal level and even below it, the pulse becomes slower and firmer, and the patient experiences a striking amendment. Now at this moment there has been little or no change in the state of the lungs which still remain infiltrated with fibrinous exudation, nor in the properties of the pneumococci which are found in great numbers in the sputa and retain all their virulence, as can easily be proved by inoculations of animals.

The pneumonic crisis, then, does not depend on any change in the state of the lungs or in the microbes which have caused the infection. To what, then, are we to attribute it? Only one explanation is possible; the crisis is due to the products of secretion of the pneumococcus, which, by their accumulation, modify at a given moment the soil on which the microbes develop.

In their experiments made on hares, the Klemperers early observed that any nutritive substance which had served as a culture medium for the pneumococci, even if it had been separated from the microbes by filtration, might confer on the animal immunity against the pneumonic infection. The power of this vaccine may be augmented, both in rapidity and intensity of action, by subjecting the liquid for two or three days to a

[1] Berlin klin. Wochen., August 21, 31, 1891.

temperature of 41° C., or during two or three hours to a temperature of 60° C.

They then obtained experimental proof that the blood-serum of a hare "vaccinated" against the pneumococcus, may cure the pneumonic infection; it suffices to inject this serum under the skin or into the veins of the infected animal. An intravenous injection of eight cubic centimetres of serum of an animal rendered refractory, practised twenty-four hours after the infection produces a gradual fall in the febrile temperature, and hastens the cure of the animal.

As will be seen, these experiments strikingly resemble those of Behring and Kitasato, who lately announced that the blood-serum of animals rendered refractory to tetanus and diphtheria is capable of curing other animals of these diseases.[2]

In another series of researches devoted to the study of the cause of the curative action of the serum of vaccinated animals, the German pathologists found that the pneumococcus when introduced into the body of an animal gives rise to the production of a *pneumotoxine* which may be isolated. This pneumotoxine produces a febrile reaction of several days' duration, after which they have noted in the fluids of the animal another substance, *anti-pneumotoxine*, which has the property of neutralizing pneumotoxine.

The blood-serum of an animal on which immunity has been conferred contains anti-pneumotoxine, and it is this which seems to forward the cure of the pneumonic infection. In the blood-serum of patients affected with fibrinous pneumonia, they have also found pneumotoxine and anti-pneumotoxine, the first, chiefly during the febrile period of the disease, the second, after the crisis. They claim to have cured the pneumonic infection in hares by injecting in these animals blood-serum taken from a pneumonic patient after the crisis.

After being assured by experiments made on themselves, that man may support with impunity and without any local and general reaction injections of the serum of animals rendered refractory to Fraenkel's diplococcus, the pathologists above mentioned ventured to experiment clinically, with therapeutic intent, on some patients affected with pneumonia. Although these trials covered only six patients, the result has been very encouraging. In fact, in all these patients, a hypodermic injection of four to six cubic centimetres of serum was followed at the end of from six to twelve hours by a considerable fall in the temperature with slowing of the pulse and respiration.

These experiments are especially noteworthy in that they so strikingly confirm the almost simultaneous and independent experiments of Emmerich and Fowitzky, who claim that they have conferred immunity on the hare by means of hypodermic injections of attenuated cultures of the pneumococcus; but this immunity, they say, is incomplete, and the extract of the organs of the animal has but an incomplete curative action. On hares infected by pneumococci, *per contra*, full immunity is obtained by intravenous injections of a culture having its entire virulence, but largely diluted. The liquid obtained by crushing and expression of the organs of an animal thus rendered refractory exercises on the pneumonic infection a sure curative action when it is injected under the skin into the abdominal cavity, and especially into the veins of the infected animal.

Large expectations are being entertained by many enthusiastic workers, that researches akin to those above noticed, now going on in many parts of the world — researches the inspiration to which came from Selmi, Gautier, Bouchard, and especially Koch — are destined to be very fruitful in therapeutic results, and that possibly the physician of the future, armed with his hypodermic syringe and his vial of "antitoxine" will find himself master of any and every infection. However, the disappointment experienced thus far in regard to tuberculin should cause us to entertain such expectations with a certain degree of caution and moderation.

[2] See vol. cxxiii, No. 24.

DIURETIN IN GENITO-URINARY SURGERY.

"Outside of the usual complications liable to attend any cutting operation, the surgeon who deals with the genito-urinary tract has to contemplate, and, if possible, guard against, that other mysterious concomitant of operations upon the urethra and bladder, known under various names, and often called 'urinary fever.'"

All sorts of things have been done to prevent urinary fever, and most surgeons have some particular method or drug in which they have at least a slight confidence. But no method has met with perfect success; perhaps because the cause is not always the same, and the method needs to be varied with the cause; perhaps because the fever in question is the result of physical change which renders the individual incapable of enduring even a slight additional strain. While the pathology is imperfectly understood, it is still necessary to attempt, somewhat blindly, perhaps, to avert this unhappy occasional result of operations on the urinary tract.

In a paper read before the American Association of Andrology and Syphilology, at Washington, last September, and published in the *Medical News* of October 31st, last, Dr. Keyes suggests the use of diuretin as possibly likely to be available for this purpose. Diuretin is one of the new drugs which, as manufactured by E. Merck, of Darmstadt, is believed to contain fifty per cent. of theobromine, the other ingredient being salicylate of soda. It is said to be a free diuretic, pretty constant in its action, and its use at the Boston City Hospital has seemed to confirm that claim. According to Dr. Keyes, it does not irritate the stomach, bowels or kidneys, and does not depress a weak heart.

Dr. Keyes would probably be the first to point out the fact, that during the past year he has lost but one

urethral case, and that since using diuretin he has lost none, and could hardly expect to, if his former percentage is to be maintained. He expressly states that he does not assert that the drug has great value, or any value, but that it does no harm, and that since using it he has had no urinary fever proper — that is, there has never been a chill nor a suppression.

The operations done since he has begun to use diuretin have been mostly done on old men with damaged kidneys, all of whom recovered without chill or any tendency to suppression; and it is fair to imagine that the means used had something to do with it, and diuretin is the only new drug used.

"If it will prevent or even moderate urinary fever, it is a valuable drug." Dr. Keyes hopes to report a more extended experience with it next year, and his commendation will undoubtedly lead others to carry on control researches.

TUBERCULOSIS OF THE SKIN.

THE three able papers on tuberculosis of the skin which appear in this issue of the JOURNAL form together a most complete study of this interesting subject. These papers were prepared at the request of the Council of the American Dermatological Association, for the purpose of introducing the subject for formal discussion at the recent meeting in Washington. Coming as it does after the interest aroused in the subject during the wide-spread trial of tuberculin, such a set of papers is of particular scientific and practical interest to the profession in general.

MEDICAL NOTES.

THE EARTHQUAKE IN JAPAN. — It is estimated that the recent earthquake in Japan killed between six and seven thousand persons, and injured nine thousand more. Seventy-five thousand houses were totally destroyed.

JACK THE RIPPER. — The publicity given to the murders in the White Chapel district in London seem to have initiated similar murders in different parts of the world. The last one recorded is from Berlin during the last month.

THE CHOLERA AT DAMASCUS. — The ravages of cholera in Damascus show an alarming increase. The record for the last week in October shows 180 cases and 90 deaths. Owing to the prevalence of cholera, Hodeida is in nearly as bad a condition as Damascus, but at Aleppo the disease has subsided.

A VENEREAL CONGRESS. — A project is now under discussion by different boards of the Paris municipal government to establish an international congress to consider questions connected with prostitution and the limitation of venereal diseases. It is proposed to hold the congress in Paris, in 1893, and to invite medical men, lawyers, sanitary officials and political economists.

THE KEELEY CURE FOR DRUNKENNESS. — Mr. John F. Mines, known as "Felix Oldboy," who recently wrote an article which appeared in the *North American Review* for October, endorsing from personal experience the Keeley bichloride-of-gold cure for drunkenness, which article has been extensively noticed in the daily press, was arrested last week for being drunk, and taken to Blackwell's Island, where he died from the effects of alcohol.

DETECTION BY FINGER-MARKS. — M. Fargeot has made a communication to the Medical Society of Lyons relating to a discovery by means of which he can obtain an imprint of any hand that has touched a piece of paper, or of a foot that has trodden the floor of a room. The basis of his method consists in making visible by chemical means slight traces of perspiration or sebaceous deposit.

THE YANKEE MEDICAL STUDENT. — The *London Hospital Gazette* thinks that the Yankee medical student has not very much to be thankful for. First of all, the medical "diploma mills" turn out their thousands of ill-trained and indifferently educated youths to take part in the professional struggle for existence, and then no kind legislation has interfered for the purposes of restricting the practice of medicine to native graduates. And now Mr. McKinley has got passed a tariff, in virtue of which the tax on microscopes has been raised sixty per cent., so that an instrument which costs ninety dollars in Germany will at wholesale cost one hundred and fifty dollars in the States. This will hardly have the effect of stimulating microscopical work, and the cost will, of course, increase *pari passu* with the minuteness of the object to be magnified, seeing that the higher the power the greater the initial cost, and therefore the more crushing the protective duty.

COLORED COAST LIGHTS. — It would appear from the testimony in the Court of Inquiry on the stranding of the steamer *Dispatch*, that a lighthouse showing a fixed red light is objectionable on more grounds than the possibility of color-blindness of pilots. Apparently, the pilot mistook the fixed white light of Assateague for a fixed red light, and as the Winter-Quarter Shoal lightship was fixed red, he supposed that he saw the latter light. Everybody on board the steamer who saw the light, testified that the light appeared red to them.

A BELATED INSCRIPTION. — Dom Pedro, ex-emperor of Brazil, has recently presented three medals to Doctors Simmola, Charcot and Count de Mott-Maiea. They have on one side the portrait of Dom Pedro, while on the other is the inscription: Presented to Dr. —— by the Brazilian people out of gratitude for saving the precious life of their paternal emperor." While the medals were being prepared, his grateful subjects drove their "paternal emperor" from the country. They were finished a few weeks ago, and were forwarded to the ex-emperor who had ordered them.

BOSTON.

Bequests to Public Institutions. — By the will of the late Mrs. John F. Andrew, the following institutions will ultimately receive legacies: Massachusetts and Children's Hospitals, Society for the Prevention of Cruelty to Children, Kindergarten for the Blind, $5,000 each; North End and South End Diet Kitchens, $2,500 each.

NEW YORK.

Mortality of the City. — There was a slight increase in the mortality of the city during the week ending October 31st, when 737 deaths were reported. This is an increase of 49 over the mortality of the preceding week, which was unusually small (688), and of 40 over the average of the corresponding week during the past five years. The deaths represent an annual death-rate of 22.65 to every 1,000 of the estimated population, against 21.15 for the preceding week, and 21.42 for the average of the corresponding week for the past five years. The principal increase was in the number of deaths from pneumonia, which amounted to 98, against 61 for the preceding week, and 81 for the average of the corresponding week for five years. Scarlet fever showed an increase of five, (the deaths numbering 15), and diphtheria an increase of 12 (32 deaths); although the mortality by the latter disease was six below the average of the past five years. There was also an increase of 12 in the deaths from diseases of the heart, which numbered 48.

The Water-Supply. — Public-Works Commissioner Gilroy having become alarmed by the rapid decrease in the amount of water in the reserve storage reservoirs, has issued a warning to the public to prevent all possible waste. For three months the rainfall in the Croton water-shed has been less than was ever known during a like period, and there is danger that the water-supply will be exhausted within three weeks unless the greatest economy is observed in its use. Should heavy rains not occur very shortly, all sprinkling of the streets and other similar uses of Croton will be prohibited.

Miscellany.

SURGICAL TREATMENT OF PULMONARY CAVITIES.[1]

At the recent Congress of Tuberculosis, M. Poirier[2] read a paper on the surgical treatment of pulmonary cavities. He said the first case on record was accidental. In a duel fought in 1679, the sword of one of the combatants passed through his antagonist's lung and opened a pulmonary cavity. The surgeon utilized the wound for the direct treatment of the cavity, and the patient recovered. In conjunction with M. Jonnesco, M. Poirier has collected all the available statistics, of which the following is a summary: — Of 29 cases of incision of tuberculous cavities with resection of ribs, improvement took place in 15, cure resulted in four (these cases must, according to M. Poirier, be taken "with every possible reserve"), in nine the result was negative, in one it was unknown. In 19 of the cases the disease was situated in the apex. M. Poirier, still with the co-operation of M. Jonnesco, has endeavored to simplify the method of operation so as to minimize the amount of traumatism. The following, according to them, is the best way of reaching the upper part of the lung. An incision is made with the thermo-cautery four centimetres below the sterno-costal notch from the middle line of the sternum outwards for nine centimetres in a direction parallel to the first intercostal space; in this way the pectoralis major, which is usually much thinned, is reached, and by enlarging one of the spaces between the fasciculi, the plane of the intercostal muscles is reached. This is divided and the pleura exposed. If there are no adhesions it is better to establish them before proceeding further, but if there is a cavity adhesions are always present. It is easy to "strike" the cavity through these adhesions, though a certain thickness of pulmonary tissue has often to be traversed for the purpose. As cavities are generally situated quite in the upper part of the lung, the first intercostal space is at a distinctly lower level than the cavity; the point of the instrument must therefore be carried from below upwards and from before backwards. When the cavity lies towards the back, the spinous process of the seventh cervical vertebra should be sought for; an incision is made outwards from this point towards the scapula; the trapezius and rhomboideus are divided, and the first intercostal space, which is much less wide than it is in front, is reached. Resection of rib may be necessary, but M. Poirier does not advise this. From experiments made on twenty dead bodies, he holds that in front resection of ribs is never called for.

[1] British Medical Journal.
[2] Semaine Médical, August 1st.

FLOATING HOSPITALS.

The Italian Society of the Red Cross has recently been conducting some elaborate experiments to test the working of floating hospitals. In countries where water communication is complete, well-equipped hospitals on barges might be of very great service, especially in time of war.

The presidents of the Red Cross and Italian Rowing Club, with Captain Olivari of the Italian Navy, set themselves to the task, first by forming a floating hospital out of the barges employed on the main waterways for the transport of combustibles; then, having got their flotilla in working order, they launched it on the Lago Maggiore.[1] Passing thence by canal to Milan, it anchored at the Porta Ticinese, and was there visited by a large number of citizens. It is composed of three barges, two of them fitted up for the accommodation of the wounded, and the third for a pharmacy, a kitchen, and the necessary stores. Of the two hospital barges, one is set apart for wounded officers, the other for wounded soldiers of the line — the two containing each twenty-four beds at present, but capable of including comfortably thirty-six each. These beds are partly on the fracture-board system, partly supported on network of metal, and are all furnished with mattresses and pillows stuffed with *zostera marina* (dried seaweed), which has the twofold advantage of being non-combustible and antiseptic.

[1] Lancet, September 19th.

Every night requisite is conveniently at hand, and ventilation is secured by an ingenious canvas awning which gives passage to a continuous circulation of air while protecting the patient from draughts. The flotilla is lighted with oil lamps, and the barge reserved for the wounded officers has accommodation at the prow for the *personnel*, superior and inferior. The store barge consists of a dispensary, an *armamentarium-chirurgicum*, a provision magazine, with ice machines, and a spacious kitchen, capable of supplying 250 mouths. There is also a complete system for storing and keeping cool and pure a perennial water-supply — a system due to the Cavaliere Borroni, secretary to the Milanese Committee of the Red Cross. The flotilla is composed of nine barges in all: the three above described having been sent down to Milan for exhibition from the Lago Maggiore, while the remaining six are in dock at Arona, on the southern extremity of the lake. These barges are moved on the lakes by tugs, on the rivers by the current, on the canals by towing horses. From Milan the flotilla proceeded by canal to Pavia, and from Pavia down stream to Piacenza, at every station commanding the highest admiration. The experiment — the first of its kind ever made — is a worthy complement to the mountain ambulances of the Italian Red Cross Association.

HYGIENIC TREATMENT OF BRIGHT'S DISEASE.

CHIRON in *L'Union Médical*, June 23, gives a review of the different dietetic treatments of Bright's disease, and says, as a general rule, dark meats, such as wild fowls, and extracts of meat, such as Liebig's, should be avoided.[1] The chief danger in such foods is the toxic properties of the ptomains they contain. In the periods when the disease is not active, white meats can be used, all condiments to be avoided. Some patients bear fish badly, but shell-fish can be used in moderation. Some patients bear milk and vegetable diet badly, and, in such, meats can be cautiously used, the urine being frequently examined to see that the albumen does not increase. Eggs are a disputed article; sometimes they agree well and sometimes badly. When, however, the digestive tract is in good condition they usually are well borne. Milk diet is, as a rule, the one best borne; it acts as a diuretic, diminishes the albumen, and increases the urea. Three and a half to four litres a day may be used. Certain patients cannot use an absolute milk diet, however, and in them a mixed diet is useful. A grape diet, skimmed milk or koumyss may be used with advantage. Most authors allow beer and a slight amount of light wines. In acute Bright's disease physical effort often increases the albuminuria. In this condition, and in the acute exacerbations of chronic nephritis, a patient should be in bed. In the chronic condition slight exercises are admissible, but where there is much polyuria or hypertrophy of the heart it is not to be permitted. Patient should avoid being chilled, and in winter should remain in a temperature as near as possible 75° to 80° and should wear flannel underclothing. The functions of the skin should be carefully looked after; baths, tepid and hot, followed by frictions and massage, are recommended by most authors, though Lecuché and Talamon recommend the cold baths.

[1] University Medical Magazine, October.

MEMORIAL OF THE LATE DR. GEORGE H. LYMAN, FROM THE VISITING STAFF OF THE BOSTON CITY HOSPITAL.

AT the regular meeting of the visiting staff of the Boston City Hospital, November 5, 1891, the following memorial was offered and adopted; and it was voted to send a copy to the family of Dr. Lyman, and also to the *Boston Medical and Surgical Journal*, for publication.

"Dr. Lyman became a member of the City Hospital Staff twenty years ago. To professional attainments of a high order he united a cheery brightness of disposition which made him a most welcome visitor to the sick-room, and nowhere was this more perceptible than in the hospital wards. No one who accompanied him on his rounds could fail to observe the gloom-dispelling power of his presence, and the smiling hopefulness of the patients who came under his influence. Kind-hearted by nature, the helpless suffering poor appealed to the strongest feelings of head and heart. He carried sunshine into the sick-room, and left it behind him.

It was not alone as the successful hospital physician, that Dr. Lyman deserves to be remembered. In the trying days of the Civil War he did brave and efficient work for his country, sacrificing very flattering professional prospects to enter the medical service of the United States Army. As Medical Inspector, he served throughout the entire period, and made a notable record in a field which allowed full scope to his active mind and tireless energy.

Dr. Lyman had been honored with the highest positions in the gift of the Massachusetts Medical Society. As President and Councillor he manifested the same lively interest in its affairs which he carried into every other duty of life, and with which we, his comrades, were so familiar.

A thoughtful writer, the treatment of his subject was always clear and interesting. His work on Ovariotomy should be especially noted, for the care and completeness of its preparation, and for the fulness of its statistics. His Boylston Prize Essay on "Non-Malignant Diseases of the Uterus" was also of a superior order. Other papers from his pen, such as his record of Army Experiences delivered before the Massachusetts Military Historical Society, excited much interest, and will be recalled with pleasure for their bright and entertaining style. His more serious historical papers have a high value for graphic style as well as for the information they contain.

A man of positive views and decided opinions, there was no mistaking his position when once his mind was made up. His side of the subject was advocated always with the energy and fearlessness of perfect conviction.

His life of usefulness was prolonged beyond the average. In another year he would have completed fifty years of professional life. His memory will remain dear to us as that of a faithful associate and true-hearted friend, whose influence will long stay with those who loved him.

JOHN G. BLAKE, M.D., *Committee.*
EDWARD J. FORSTER, M.D.,
Secretary of the Visiting Staff.

THERAPEUTIC NOTES.

TREATMENT OF DIPHTHERIA BY CYANIDE OF MERCURY.[1] — M. de Ruelle has obtained good results from the use of cyanide internally, recommended by Werner and Lœffler, and as follows:—

℞	Cyanide of mercury	gr. i.
	Alcohol	ʒ ij.
	Water	ʒ vij. M.

A teaspoonful every hour.

TONQUINOL, the new artificial musk, occurs as a snow-white crystalline powder with which needle-

[1] Medical Press, September 30th.

shaped crystals are interspersed.[2] The odor appears to be due to the presence of a nitro-terpene and nitro-sulpho-xylol. It is soluble in alcohol, water, fats, oils, ether, and chloroform. The alcoholic solution (1 in 50), on considerable dilution with water, is very agreeable in odor, and the perfume is not precipitated. At present tonquinol is sold by the manufacturers at the rate of one and one and half pence per grain.

Dermatitis Caused by Resorcin. — Dr. A. Ravogli[3] reports a series of cases in which the local application of resorcin was followed by dermatitis. The resorcin had been given as a salve, half a drachm to one ounce of vaseline, or as a wash of one and one and half per cent.

Iodide of Potassium in Diphtheria. — Zenenko,[4] speaks highly of the treatment of diphtheria by iodide of potassium. In adults the drug should be given from five to eight grains every two to four hours, up to one-half to one drachm a day. In children, from one to fourteen years of age, single doses should range from a half to three grains. The administration should be continued until the appearance of iodism and an incipient separation of false membranes, which usually occurs on the second, third, or fourth day. As adjuvant means, he employed hourly gargling with a two or three per cent. boracic or salicylic acid lotion with glycerine and tincture of geranium or camphorated spirit; further inunctions of gray mercurial ointment (from one scruple to one drachm twice a day) were used for enlarged cervical and submaxillary glands, while stimulants, quinine, etc., were freely given.

Correspondence.

A. D. 2000.

Like Bellamy's hero, I overdosed
With some seductive drug,
And snoozed for more than a century
Buried in cellar snug;
Till an *ex post facto* Doctor man
Into my quarters dug,
And injected some hypnotic germs
From a medical humbug.

He brushed off the dust of an hundred years,
And gave me a cordial strong;
"From all your surroundings it appears
That you must have laid here long:
You're clad in XIXth Century gear
If my judgment is not wrong;
'Tis well *I* found you; for my compeers
Would have roasted you ere long.

"You see, we're working an arsenic mine.
In the graveyards of Boston town;
The corpses are solid with metal fine,
And we reduce it down.
So solid it is that they often shine
With crystals red, green and brown —
Arsenic from sternum through to spine,
From ossa calces to crown.

"Our histories tell, that, in days of yore,
The populace all fell sick
With illnesses which the doctors swore.
Were due to arsenic.
Their glands, in a fashion unknown before,
Absorbed the poison quick;
From papered wall and carpeted floor,
They got it 'fast and thick.'

"From fabrics yellow, red, green or blue;
From clothing and furniture plush;
From whatever possessed a brilliant hue,
Not excepting a maiden's blush;
From the soot and smoke of the chimney flue;
From plain old Puritan mush;
From legumes, roots, tubers and canned goods, too;
From the fruit of vine and bush.

"For all of the neighboring country through
The farmers could be seen
Besprinkling whatever crop they grew
With deadly Paris green;
It would kill the potato-bug, they knew,
Far better than kerosene, —
Gipsey-moths and flies and rose-bugs, too:
It killed them all off clean.

"The dust which was stirred by wind and sun
Bore to town a fresh supply,
And marketmen brought it in by the ton
For their customers to buy.
No wonder the mischief by arsenic done
Caused a great mortality" —
Here he paused and winked: "You know, my son,
There's arsenic in every *dye*."

C. F. C.

October 26, 1891.

[2] Medical and Surgical Reporter.
[3] Vratch, No. 42, 1890.
[4] Cincinnati Lancet Clinic, September 5th.

RECORD OF MORTALITY

For the Week ending Saturday, October 24, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	688	276	14.98	14.56	5.04	1.26	4.76
Chicago	1,099,850	397	162	22.25	9.75	2.75	8.00	7.50
Philadelphia	1,046,964	407	123	20.16	9.36	4.80	.96	11.52
Brooklyn	806,343	359	160	15.66	9.45	4.86	1.89	6.21
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	187	40	13.50	15 66	3.78	4.86	3.78
Baltimore	434,439	176	72	19.38	10.83	6.27	3.99	6.27
Cincinnati	296,908	110	36	13.65	9.10	4.55	4.55	2.73
Cleveland	262,000	87	34	16.28	11.90	4.76	3.57	5.95
New Orleans	242,039	—	—	—	—	—	—	—
Pittsburg	240,000	—	—	—	—	—	—	—
Milwaukee	240,000	77	42	31.20	9.10	9.10	5.20	13.00
Washington	230,392	113	44	18.69	10.68	4.45	6.23	8.01
Nashville	76,168	22	10	227.5	18.20	4.55	9.10	4.55
Charleston	65,165	28	8	7.14	17.85	7.14	—	—
Portland	36,425	16	3	—	18.75	—	—	—
Worcester	84,655	28	5	7.14	32.13	—	7.14	—
Lowell	77,696	30	10	10.00	16.66	3.33	6.66	—
Fall River	74,398	32	17	15.65	9.39	6.26	3.13	3.13
Cambridge	70,028	26	11	19.25	15.40	11.51	3.85	3.85
Lynn	55,727	28	10	17.85	3.57	10.71	3.57	3.57
Lawrence	44,654	16	2	25.00	12.50	—	6.25	18.75
Springfield	44,179	9	7	55.55	11.11	22.22	—	22.22
New Bedford	40,733	13	6	38.45	15.38	23.07	—	7.69
Salem	30,801	13	4	15.38	—	15.38	—	—
Chelsea	27,909	14	7	—	28.56	—	—	—
Haverhill	27,412	8	2	—	37.50	—	—	—
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	4	1	—	—	—	—	—
Gloucester	24,651	9	0	—	11.11	—	—	—
Newton	24,379	3	2	66.66	—	—	33.33	—
Malden	23,031	3	1	—	—	—	—	—
Fitchburg	22,037	8	2	12.50	12.50	—	12.50	—
Waltham	18,707	5	2	—	40.00	—	—	—
Pittsfield	17,281	5	1	—	—	—	—	—
Quincy	16,723	10	1	—	10.00	—	—	—
Newburyport	13,947	2	1	—	—	—	—	—
Medford	11,079	0	0	—	—	—	—	—
Hyde Park	10,193	—	—	—	—	—	—	—
Peabody	10,158	4	2	—	25.00	—	—	—

Deaths reported 2,935: under five years of age 1,104; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 417,

consumption 373, acute lung diseases 289, diphtheria and croup 189, diarrhœal diseases 145, typhoid fever 101, scarlet fever 38, malarial fever 15, cerebro-spinal meningitis 11, whooping-cough 7, measles 6, erysipelas 5.

From scarlet fever New York and Chicago 10 each, Philadelphia 5, Brooklyn and Baltimore 3 each, Boston and Milwaukee 2 each, Springfield, New Bedford and Newton 1 each. From malarial fever New York and Brooklyn 5 each, Philadelphia 3, Baltimore 2. From cerebro-spinal meningitis New York 4, Chicago 3, Brooklyn and Cincinnati 2 each. From whooping-cough New York 3, Chicago, Philadelphia, Milwaukee and Nashville 1 each. From measles New York 4, Chicago and Philadelphia 1 each. From erysipelas New York and Philadelphia 2 each, Chicago 1.

METEOROLOGICAL RECORD,

For the week ending October 25, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer.	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		We'th'r. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
M..19	30.07	52	48	55	83	73	78	N.	N.E.	12	4	O.	O.	
T..20	29.86	53	57	50	97	87	92	E.	S.W.	25	12	R.	C.	
W..21	29.79	51	56	46	79	64	72	S.W.	W.	16	12	O.	C.	
T..22	29.86	50	53	45	73	61	67	W.	N.	12	16	C.	O.	
F..23	29.64	40	47	33	95	69	82	N.	N.W.	19	18	N.	C.	
S..24	29.83	41	47	35	60	57	59	N.W.	W.	17	12	O.	C.	
S...25	29.96	41	51	31	63	38	50	W.	W.	16	5	C.	C.	
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; S., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 7, 1891.

MANLY H. SIMONS, surgeon, ordered to U. S. S. "Mohican."

FRANK DUBOIS, medical inspector, ordered to U. S. S. "Philadelphia."

T. WOOLVERTON, medical inspector, detached from U. S. S. "Philadelphia," and ordered before Retiring Board.

N. J. BLACKWOOD, assistant surgeon, detached from U. S. S. "Newark," and ordered to Navy Yard, League Island, Pa.

C. DEW. BROWNELL, assistant surgeon, detached from Navy Yard, League Island, and ordered to U. S. S. "Newark."

PHILIP LEACH, passed assistant surgeon, detached from the Naval Academy, and ordered to U. S. S. "Monocacy."

JOHN E. PAGE, assistant surgeon, detached from the U. S. R. S. "Independence," and to the U. S. S. "Iroquois."

JAMES G. FIELD, assistant surgeon, detached from Bureau of Medicine and Surgery, and placed on waiting orders.

THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Membership is obtained only by election at the annual meeting. "Every pharmacist and druggist of good, moral and professional standing, whether in business on his own account, retired from business, or employed by another, and those teachers of pharmacy, chemistry and botany who may be especially interested in pharmacy and materia medica" are eligible for membership. For blank application and further information, address Dr. H. M. Whelpley, 2729 Washington Avenue, St. Louis, Mo., Chairman of the Committee on Membership.

MIDWIFERY DEPARTMENT OF THE NEW YORK POST-GRADUATE MEDICAL SCHOOL.

Mrs. C. P. Huntington has given the Directors of the Post-Graduate Medical School $2,000, a sum sufficient to defray the expenses of the Midwifery Department for one year. Professor von Ramdohr will have charge of this Department, at No. 543 East 13th Street, where instruction in obstetrics will be given to graduates in medicine only.

EXAMINATION FOR INTERNES, CARNEY HOSPITAL.

The regular examinations for the position of house-officer at the Carney Hospital for next year will be held at 188 Marlborough St., on Tuesday, December 1st, at 3.30 P. M. Application must be made before November 28th to the secretary, Dr. J. J. Minot.

SOCIETY NOTICES.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene will meet at 19 Boylston Place, on Wednesday, November 18th, at 7.45 o'clock.

Reports of Committees: On "The Condition of the Streets of Boston," and on "The Need of an Emergency Hospital in the Business District."

Papers: Dr. H. F. Vickery, "Unsuspected Heart Disease" (Drs. E. N. Whittier and F. C. Shattuck will open the discussion); Dr. Malcolm Storer, "A Successful Case of Double Ovariotomy."

ALBERT N. BLODGETT, M.D., *Sec'y.*, 390 Boylston St.
E. G. CUTLER, M.D., *Chairman.*

MEDICAL SOCIETY OF THE STATE OF NEW YORK. — The next meeting of this Society will be held at Albany, February 2, 3 and 4, 1892. Drs. Seneca D. Powell, No. 12 West 40th Street, New York, James D. Spencer, of Watertown, and Franklin Townsend, No. 2 Park Place, Albany, have been appointed the Business Committee. Any communications regarding papers or any matter pertaining to the business of the Society which should properly come before the Business Committee should be addressed to Dr. Seneca D. Powell, 12 West 40th Street, New York City.

F. C. CURTIS, *Secretary.*
A. WALTER SUITER, *President.*

BOOKS AND PAMPHLETS RECEIVED.

Twenty-second Annual Report of the State Board of Health of Massachusetts. 1891.

The Post-Partum Douche (Showing New Instrument). By Edwin Pynchon, M.D. Reprint. 1891.

The Treatment of Erysipelas, a Personal Experience in Fifty Cases. By Charles W. Allen, M.D. Reprint. 1891.

Clinical Comments on Cutaneous Cases. Pemphigus Circinatus. By Charles W. Allen, M.D., New York. Reprints. 1891.

The Statistics and Lessons of Fifteen Hundred Cases of Refraction. By George M. Gould, M.D., Philadelphia. Reprint. 1891.

Annual Announcement of the Louisville College of Dentistry, Dental Department of the Central University of Kentucky. Session of 1892.

Fractures at the Elbow-Joint. Resection as a Substitute for Primary Amputation. By Thomas H. Manley, M.D., New York. Reprints. 1891.

Addresses, Papers and Discussions in the Section of State Medicine at the Forty-second Annual Meeting of the American Medical Association. 1891.

The Newspaper Manual for 1891, Fifth Year. A Catalogue of the Newspapers of the United States and Canada. Pittsburgh, Pa., and New York: Remington Brothers.

Artificial Anæsthesia and Anæsthetics. By De Forest Willard, M.D., and Dr. Lewis H. Adler, Jr. Physicians Leisure Library. Detroit: George S. Davis. 1891.

Memoir of Joseph Leidy, M.D., LL.D. From the Proceedings of the Academy of Natural Sciences of Philadelphia. By Henry C. Chapman, M.D., etc. June 30th, 1891.

Which is Scientific Medicine? A Comparison of Allopathy and Homœopathy Based on the Study of Arsenic. By M. W. Van Denburg, A.M., M.D., Fort Edward, N. Y. Reprint. 1891.

The Prevention of Morphinism. A Therapeutic Revolution: Codeine and Narceine, *vice* Morphine. By J. B. Mattison, M.D., Medical Director, Brooklyn Home for Habitues. Reprint. 1891.

Surgery, Its Theory and Practice. By William Johnson Walsham, F.R.C.S., Assistant Surgeon, St. Bartholomew's Hospital. Third edition. Philadelphia: P. Blakiston, Son & Co. 1891.

Higher Education in Indiana. By James Albert Woodburn, Ph.D., Professor of American History in the Indiana University. Bureau of Education, Circular of Information, No. 1. 1891.

The Comparative Anatomy of the Domesticated Animals. By A. Chauveau, M.D., LL.D., Inspector General of Veterinary Schools in France, with the Coöperation of S. Arloing, Professor at the Lyons Faculty of Medicine. Second English edition. Translated by George Fleming, C.B., LL.D., F.R.C.V.S. New York: D. Appleton & Co. 1891.

Original Articles.

THREE CASES OF COMPOUND FRACTURE OF THE PATELLA, IN WHICH THE BONES WERE WIRED WITH GOOD RESULTS.[1]

BY A. T. CABOT, A.M., M.D., BOSTON.

These cases are reported as a contribution to the statistics of this operation.

It is the writer's feeling that in simple fractures of the patella the added risks of an opening into the joint are so great that the best treatment is by apparatus, with bandaging so applied as to bring the fragments as close together as possible. In such cases an operation may be required after the leg has recovered if the fragments are so far apart that the limb is practically useless. Ordinarily, however, the ligamentous union gives a strong and useful leg even when the fragments are separated by a considerable interval.

In compound fractures of the patella where we already have an opening into the joint the question is quite a different one, and the operation of wiring seems to be demanded in every case, for not only is the chance of a useful joint increased by wiring the bone, but we have also the opportunity of clearing the joint of blood and fragments of bone, and with dependent drainage provided for, the chance of a healing by first intention without suppuration is greatly increased.

In all of the cases reported silver wire was used, and this wire was cut off short and buried by being pressed down firmly against the surface of the bone. In none of the cases did the wire give any trouble.

Case I. John B., a large, vigorous man of twenty-nine, entered the Massachusetts General Hospital, July 15, 1887, with a compound comminuted fracture of the right patella.

Under ether, the opening was enlarged by a transverse incision over the joint. The middle portion of the bone was shattered into small pieces which lay about loose in the joint, and were thoroughly removed.

The fragments remaining attached to the quadriceps tendon and the ligamentum patellæ were evened off with a saw, so that smooth surfaces could be approximated, and then attached to each other by two wires.

Dependent drainage was provided by tubes low down on the sides of the joint, and the leg was placed on a posterior wire splint.

Healing took place by first intention, and he left the hospital on September 13th, with a stiff bandage on the leg.

In November he was going about with no bandage and with good motion in the knee, and in December his knee was so well and strong that he could go upstairs two steps at a time. In the latter part of December he made a misstep coming down, and refractured the patella, the separation occurring, as nearly as could be made out, along the line of union of the old fracture.

He re-entered the hospital on December 26th, in Dr. Porter's service, and the case was treated as a simple fracture by apparatus.

He left the hospital on January 28th, with a stiff bandage. When this was taken off two months later, the patella was found firmly united by what appeared to be bony union. One of the wires could be felt, but had caused no trouble, and the vertical diameter of the patella was one-half an inch greater than on the well side.

The leg gradually became strong, and the motion in the joint was restored until in May, 1891, the patient could bend the knee considerably past a right angle, and ordinary walking was not interfered with. The patella was perfectly movable.

Case II. J. B., a heavy man of fifty-one, fell from a roof on October 22, 1888, sustaining a simple comminuted fracture of the left patella, while in the right leg he suffered a compound comminuted fracture of the patella, and a compound fracture of the thigh about four inches above the knee-joint.

The opening into the right knee-joint was enlarged by a transverse incision.

The bone was so thoroughly comminuted that after the loose pieces had been removed, there were left two small fragments attached above to the quadriceps tendon, and one still smaller wedge-shaped piece on the ligament below.

A wire was passed from side to side through the two fragments above, and the lower fragments being too small to give holding-ground, the wire was passed through the ligament just below it.

When this wire was tightened, it drew the little wedge of bone below up between the two upper fragments and held it firmly.

Dependent drainage was provided by tubes on the sides of the joint and the leg was treated on a posterior wire splint as in the former case, with the addition of extension to the thigh by a modified Buck's apparatus.

The wounds in the legs healed by first intention, in spite of the fact that a severe facial erysipelas developed about a fortnight after the injury.

At the end of two months the patella was firmly united, and the knee had a good degree of mobility. Unfortunately, the thigh did not unite, and in consequence of this fact the whole leg was encased in plaster.

In the summer of 1890, hearing that this patient's leg was useless on account of the ununited fracture of the thigh, I sent for him, and he re-entered the hospital; under ether I cut down upon the ends of the bone, and dovetailed them so that they fitted together and were held in position by the tension of the muscles.

This operation was followed tardily by union of the femur, but the long confinement of the leg in apparatus and stiff bandages had led to a stiff knee.

Now on May 5, 1891, the right patella which was wired is fixed to the front of the femur. There is very slight motion between the femur and tibia.

On the left leg the patella is so closely united that no interval can be felt between the fragments, and there would seem to be bony union were it not that by grasping the upper and lower portions of the bone firmly a little lateral motion can be detected. This knee has good motion and is strong.

The good motion that was found in the right knee at the end of two months when the patella was firmly united, shows beyond a doubt that this knee would have been at least as good as the other if passive motion could have been begun at that time.

Unfortunately, the long subsequent confinement of the leg (two years) finally caused a fixation of the patella, and stiffness of the joint.

Case III. James M., a strong man of twenty-seven, entered the Massachusetts General Hospital

[1] Reported at the meeting of the Surgical Section of the Suffolk District Medical Society, May 6, 1891.

August 3, 1890. He had just fallen from a freight car, striking the ground upon his knees, and had sustained a compound comminuted fracture of the left patella.

He was at once etherized. The opening over the patella was enlarged by a long incision transverse to the joint. The blood and loose fragments were removed from the joint, and there then remained one large fragment attached to the quadriceps above, and two small fragments attached to the ligamentum patellæ below. Two wires were introduced, each of them attached one of the lower fragments to the large upper fragment. Drainage-tubes were introduced low down on the sides of the joint, and the wound was stitched together. Recovery was uninterrupted. The stitches were all taken out on the eighth day, and the wound was perfectly healed by first intention.

At the end of three weeks the patient left the hospital on crutches, with the left leg encased in plaster. This plaster bandage was removed about two months later, at which time the bone was found to be firmly united, and the patient was allowed to begin passive motions for the restoration of the functions of the joint.

May 6, 1891, the following condition existed. The wired patella seemed to be firmly united by bony union, and equalled the patella on the well knee in size. It was freely movable. The leg was strong, and the knee would bend almost to a right angle. Steady improvement was still going on in the usefulness of the joint.

In all of these cases the result as far as apposition of the fragments and restoration of the bone was concerned, was better than can ordinarily be obtained in simple fractures of the patella which are treated without operation. As far as can be judged at this time the fragments have united in all three of these cases by bony union, and what is more, the patella which has resulted in each case is three or four times as large as the fragments of which it was composed. In each instance the middle part of the patella was broken into a number of loose fragments that had to be removed from the joint cavity, leaving comparatively small fragments to be attached together, yet the patella in each case has been restored to its full size.

In the first and third cases the fragments of bone were sufficiently large to allow of putting the wire through from the anterior surface of the upper fragment to the surface of the fracture, then entering by the fractured surface of the lower fragment to bring it out on the anterior surface of that. Thus the wire did not enter or encroach on the joint cavity. The important point being to have the wire come out on corresponding points on the broken surfaces; it is well to drill the holes from these surfaces to the anterior surface of the bone, and in this way a very exact adjustment can be made.

In Case II, the small size of the pieces of bone made some other method of wiring necessary, and the circular wire running through the different fragments and gathering them together as by a purse-string, answered admirably. By this method, too, the wire can be carried, as was done in this case, through the ligament below a fragment that is too small to hold it.

This method of wiring by carrying a circular wire around the fragments was first practised in 1865 by Dr. Samuel Cabot in one of the earliest cases on record in which a wire was used for uniting the fragments of a patella. There was much suppuration in this case, done before the days of aseptic surgery, and the patient died five months after the operation. No autopsy could be obtained, but there was every evidence of a bony union between the fragments.

The second accident that happened to Case I shows that care in the avoidance of unusual strain is important even for some time after the joint appears to have recovered full strength and usefulness.

Passive motion may be begun much earlier with a wired patella than with one that is treated as a simple fracture. In the latter case the ligamentous union must have time to become firm or it will be stretched when a strain is brought upon it; when the patella is wired, however, we may expect bony union at the end of seven or eight weeks, and after this passive motion may be begun. It will be safer for some time, even after this, to wear a splint or stiff bandage when going about in order to avoid the chance of a sudden strain.

TWO CASES OF AMPUTATION AT THE HIP-JOINT.[1]

BY J. COLLINS WARREN, M.D.

THESE cases are reported for the purpose of illustrating the success which may attend an operation of this severity in advanced tubercular disease of the bone with many of the complications which attend it. In one case primary, in the other secondary amputation was performed.

CASE I. D. L., eighteen years old, had had disease of the right hip for ten years. He had been able to get about on crutches until two months before entrance into hospital, when the knee-joint, which had troubled him for some time, suppurated, and he had since been confined to his bed. The abscess discharged through a sinus in the popliteal space; and at the time of entrance to the hospital (November 4, 1890), the joint was completely disorganized, and moved freely in all directions, causing great pain on the slightest motion. The inner condyle was protruding through the popliteal space.

When I first saw the patient he was on a stretcher in the accident-room, having just arrived and appeared to be suffering greatly and in a state of great debility. Emaciation was extreme. I found no difficulty in making the forefinger and thumb of my hand meet around the thigh of the healthy limb. A more careful examination later disclosed numerous sinuses discharging from the neighborhood of the hip-joint. The lungs were in a healthy condition. There was increased dulness in the regions of the liver and the spleen. An examination of the urine showed the presence of one-quarter per cent. of albumen and hyaline and fatty casts. The pulse was fairly strong, and the patient showed great pluck and determination to go through any operation that would relieve him of his sufferings. On consultation it was decided that amputation should be performed below the trochanters, and, if the shock was not too great, that the head of the bone should be removed also.

The operation was performed November 8th. A strong rubber tubing was passed around the thigh at the groin and held above the trochanter by means of a retractor. Amputation was done by the circular

[1] Reported at the Meeting of the Surgical Section of the Suffolk District Medical Society, May 6, 1891.

method as high up as possible, and the vessels having been secured, a vertical incision was made over the trochanter, and the head of the bone with a portion of the shaft was dissected from its socket. A small portion of the periosteum of the shaft was saved. The joint proved to be healthy, but a sequestrum occupied the region of the trochanters. The shock from the operation was comparatively slight; and before the patient left the amphitheatre he exclaimed, in answer to a question, that he felt "good." The wound healed partly by first intention and partly by granulation.

On December 10th the record states that the patient was about on crutches, and that the urine had cleared up and the liver dulness had greatly decreased.

On December 31st the patient was discharged with a small sinus about one-inch deep on the outer surface of the stump. He had gained greatly in weight and was in excellent condition.

Case II. E. T. F., a tall and emaciated young man about nineteen years old, entered the hospital October 23, 1890, with hip-disease of the right limb, of fourteen years' duration. The femur was dislocated backwards and strongly adducted. The right leg was very much shorter, greatly atrophied and nearly useless, although formerly he had been able to touch the tips of the toes to the ground. There was an abundant discharge of pus from several sinuses on the thigh and hip, and a marked evening rise of temperature. His general condition was otherwise good, and the urine was normal. On November 15th an examination under ether showed that the head and greater portion of the trochanter had disappeared. The end of the bone was exposed and about three inches of the shaft was excised. A temporary improvement followed the operation, but the discharge of pus soon became as abundant as ever, and the "pus temperature" re-established itself. The limb was accordingly removed on December 20th, and an attempt made to lay open the sinuses about the acetabulum; but the shock of the operation rendered any prolonged dissection inadvisable. The patient rallied well from the operation, but the flow of pus continued.

On February 5th an examination was made under ether, and a large pus cavity in the buttock was laid open, and an attempt was made to drain the acetabulum.

Shortly after this I was able to pass a probe through the acetabulum into the pelvis, and it was then found that pressure on the right iliac fossa was followed by an abundant discharge of pus. By straining, the patient could force a jet of pus through this sinus.

On February 23d the whole stump was laid open by a long incision; and the acetabulum being freely exposed, a sinus was seen communicating with the interior of the pelvis. This was enlarged with the chisel so that two fingers would be passed easily through the opening, and the probe was felt presenting in the right iliac fossa. The cavity was throughly washed out with a weak solution of corrosive sublimate, and two large-sized drainage-tubes were inserted, a third being placed beside them to drain the external wound. From this time on the patient gained strength rapidly, and the discharge of pus diminished.

On March 19th he used crutches for the first time, and left the hospital March 25th.

May 6th. At an interview with the boy's father to-day, I learn that after leaving the hospital there was a rise of temperature with increased discharge from the wound, but that the temperature is now nearly normal, and only about a tablespoonful of pus comes from the four tubes that are at present in the wound. He is able to walk on crutches and to make his way about the house. He has gained greatly in strength and flesh, and the prospects of complete recovery are now good.

Case I, I am able to show you this evening. You observe that the patient is in perfect health, and no sinus of any kind is to be found in the stump. My thumb and fore-finger extend only half way around his thigh. The disappearance of all symptoms of amyloid degeneration of the liver, kidneys and spleen, which seemed to be well marked before the operation, is, perhaps, the most interesting feature of this case.

PROGNOSIS IN POTT'S DISEASE OF THE SPINE.[1]

BY SAMUEL KETCH, M.D., NEW YORK,
Chairman Orthopedic Section of the New York Academy of Medicine; Clinical Professor of Orthopedic Surgery, Woman's Medical College, New York, etc.

In making a prognosis regarding the result in a case of Pott's disease, the surgeon has many different factors to take into consideration. We will succinctly treat of these from the following standpoints: (1) location, (2) age of the patient, (3) etiology, (4) complications, (5) thoroughness of treatment.

Clinically the vertebræ, the seat of an osteitis, regarded from the standpoint of prognosis, may be considered as follows: the superior region, from the first cervical to the third dorsal vertebra, inclusive; the middle, from the fourth dorsal to the tenth; and the inferior region, from the eleventh dorsal to the fifth lumbar vertebra, inclusive.

As a matter of clinical experience it is commonly asserted that of these regions, more cures are affected in the superior and inferior regions and in a shorter space of time, than in the middle portion of the spine.

In order to have some definite statistics concerning regional prognosis, I have taken 75 cured cases, through the kindness of Dr. Newton M. Shaffer, from the case-books of the New York Orthopedic Dispensary and Hospital, and divided them equally amongst the different regions. These cases, I would state, were not selected ones, but taken as they presented in the regular order of admission. I have analyzed them from the following standpoints: (1) sex; (2) age at which they presented for treatment; (3) etiology; (4) duration from time of beginning of treatment, until the patient was discharged cured; (5) complications arising in the different regions during treatment.

We shall first consider the superior region.

Of the 25 cases, 10 occurred in males, 15 in females; a proportion on which no argument can be based to show that either sex is peculiarly liable to disease in this region.

As to the age at which the patients presented with disease in this area, I found that the youngest was one and a half years, the oldest seventeen years of age; five were from one to five years of age; thirteen were from five to ten years, and seven over ten years old.

Regarding as we do that spondylitis is essentially a

[1] Read before the American Orthopedic Association at Washington, September 24, 1891.

disease of childhood, although not absolutely so, this would show that during this period, that is, from one to ten years, 18 cases presented, or about 72 per cent. of the total number. From clinical observation I should be of the opinion that disease in the superior region occurs at an earlier age than in the middle or inferior areas. It is worthy of note also, that with these cases we are not always in the position to discover how long the disease existed before presenting for treatment, questions as to this point eliciting the most vague and oftentimes unreasonable replies. Thus, I have seen large kyphoses, which the parents stated had only existed for a short time. Again, in attempting to arrive at some conclusions regarding the etiology of spondylitis in the superior area, the answer given to the question as to causation, "as stated by patients or parents," was almost invariably, "I do not know." This was also true of the other areas, where no leading questions were asked concerning falls or injuries; the peculiarity in the latter respect being that most all the patients could furnish a history of a fall at one period or another.

In attempting to give the relation of etiology to prognosis, I shall consider the total number of cases; and of the 75 cases included in this paper, no definite cause was assigned in 68. Seven cases, three in the superior region, two in the middle, and two in the inferior region, give unmistakable histories of traumatism. In all of these seven cases, the time occupied in the treatment was much less than in the others, bearing out the fact, that simple traumatic cases are, as a rule, more favorable from the standpoint of prognosis. I found that in 45 of the 68 cases, or about 60 per cent., some evidence of hereditary tubercular predisposition could be found, either on the side of the father or mother, phthisis being the most frequent disease. This bears out researches of Jaffé, Gibney and Taylor, regarding the tubercular origin of the majority of cases of Pott's disease. The influence of etiology on prognosis, is therefore most important in estimating the outcome in any given case.

The duration of time from the beginning of treatment until the patient was discharged cured, showed that in the superior or cervical area $26\frac{1}{5}$ months as the average time occupied in gaining this result. The shortest time taken in any given case was three months, the longest eight years. This also included the time of observation after the apparatus was removed, and while the patient was still regarded as liable to relapse. It must also be remembered that these cases were treated in a public institution, that they did not receive the best home care, and that in many the treatment could not be carried out as regularly and as faithfully as in private practice; all factors which would materially influence the prognosis. Of the complications most liable to happen in the course of Pott's disease, namely, abscesses and paraplegia, of the total number analyzed, this region gave but one case with abscess and one with paraplegia.

In the middle region fifteen cases occurred in males and ten in females. The time at which the patients presented for treatment, showed the youngest recorded age as twelve months, the oldest thirty-two years. Ten were from one to five years of age; nine from five to ten; and six from ten to thirty-two years. The average time occupied in obtaining a cure in this area, shows an average of $64\frac{1}{3}\frac{5}{8}$ months. The shortest time in any case being one year, the longest eighteen years. Eight cases in this region were complicated with abscesses and but two with paraplegia.

The occurrence of but three cases of paraplegia in the superior and middle regions, is, I hardly think, a fair estimate of the liability of the superior and middle areas of the spine to the occurrence of this complication, as clinically the proportion is much larger than appears from these cases, and these regions may be truly called the "paraplegic regions of the spine." Two of the cases in the middle area were also complicated by a coexisting hip-joint disease.

In the inferior region twelve cases occurred in males, and thirteen in females. The youngest case recorded as presenting for treatment was one year old, the oldest twenty-six years. Thirteen were from one to five years of age; nine from five to ten; and three above ten years. The average time occupied in obtaining a cure in this region was $47\frac{1}{3}\frac{1}{8}$ months. The shortest time in any individual case was six months, the longest nine years and four months. Ten cases had abscesses and but one paraplegia in this region. Other complications recorded were two cases of morbus coxarius, one of these cases being a double hip-joint disease.

It would hardly be commensurate with a paper on the prognosis of such a chronic, painful and deforming disease as the one under discussion, to dismiss the subject without a brief allusion to the questions of deformity and mortality.

It is an unfortunate fact that the majority of cases brought to the orthopedic surgeon have already advanced to the stage of deformity; and one of the first questions asked, is, as to the disappearance of the hump. Regarding its absolute disappearance, I am convinced that very few cases have this fortunate conclusion. We are certainly in the position to prognosticate a smaller amount of deformity in the cervical and lumbar regions, but our art is hardly yet advanced to that point where we can promise a complete recession.

That this does occur at times there can be no doubt, and in rare instances we all witness it, but as stated before this Association, in a paper read at the last annual meeting, "Some of the marvellous cases of supposed organic kyphoses the result of caries, were, in reality, puzzling cases of posterior rachitic curvature." I am convinced, however, that the prognosis of deformity will be much better in proportion to the time at which we are enabled to begin treatment, and that in this, as in other deforming diseases, much is still to be done in the way of propylaxis, by rendering the diagnosis so clear that patients with incipient disease will be placed under treatment at the earliest opportunity.

In regard to mortality it is my belief, that, with improved methods of treatment and better facilities for carrying these out, both in public and private practice, the percentage of deaths from Pott's disease *per se* has been materially decreased. Indeed, it is rather with the complications or sequelæ of the disease that mortality occurs.

The influence of thorough mechanical treatment on the prevention of abscess and paraplegia, will be brought before the Association by another member. I am convinced, however, that the carrying out of mechanical treatment in every detail exercises a very decided influence in preventing these serious complications of Pott's disease, not only reducing the mortal-

ity but rendering the eventual prognosis more favorable.

As to the statistics regarding mortality, we are already in possession of sufficient bearing on this point: Jaffé, 22 deaths in 82 cases; Mohr, seven deaths in 72 cases; and Billroth and Menzel, 23 deaths in 61 cases.

A point of some importance in prognosis is the known fact of the tendency of some cases to spontaneous recovery. If this were to apply to any particular class of cases, it would pertain to those of traumatic origin, in cases without hereditary tubercular taint. We are, however, in possession of no other means of differentiating these at the beginning from cases which pursue the ordinary chronic course.

Another fact largely influencing ultimate prognosis, is the opportunity to be able to carry out treatment over a long period. The statistics here compiled show that in no portion of the spine can we produce uniformly rapid cures, and I should urgently protest against the strong tendency towards the early removal of apparatus, as the relapsed cases only frequently show the folly of this step.

A *résumé* of the more important points evolved by this analysis would show that in 75 cases 37 were males, 38 females; that 28 cases presented from one to five years of age, 3 cases from five to ten years, 16 above ten years old; that the average time of treatment in obtaining a cure was $26\frac{9}{25}$ months in the superior region, $64\frac{1}{2}\frac{8}{5}$ months in the middle region, $47\frac{1}{2}\frac{1}{5}$ in the inferior region; that, as a complication, abscess was most frequent in the middle and inferior areas, nearly fifty per cent., developing there in the course of the disease: that paraplegia may be looked for more frequently in the superior and middle areas, rarely in the inferior.

TORSION; WITH DESCRIPTION OF AN AUTOMATIC FORCEPS FOR RAPID TORSION.[1]

BY F. M. BRIGGS, M.D.,
Surgeon to the Boston Dispensary.

Although torsion has several distinct advantages over any other method of treating hæmorrhage, and although with certain limitations it is both safe and practicable, it has never found general favor as a hæmostatic measure and is rarely made use of.

The method is a very ancient one, having been recognized and practiced in the first and second centuries. In the early part of the present century it came into use in France, but after having been tried for a while, was finally abandoned, as being unsafe when applied to large arteries.

Warren[2] states that torsion was brought to the notice of and was used by Velpeau in 1826; that it was also practiced by Amussat, who, in 1829, presented a paper on the subject to the Academy of France.

Ashhurst[3] says that in this year (1829) it was successfully used in Germany; but was followed by several failures in France, and it was referred to Duypuytren for thorough investigation. His report was unfavorable to torsion except in the case of small arteries. After this the method went out of use, but was revived and practiced by Syme.

Bryant[4] speaks of it very highly. In an experience of nine years, upon vessels of all sizes, he has never had a mishap, and he believes it to be the most perfect physiological method at command for the treatment of hæmorrhage.

Warren,[5] speaking of its physiological value, refers to the experiments of Kocher, who concludes that: "Torsion enjoys with acutorsion and acupressure the great advantage of favoring a rapid coagulation, and also has its own special advantage of producing a much more intimate union between the thrombus and the vessel wall . . . these advantages are especially true of illimited torsion; when properly done, it is the ideal for small arteries."

Holmes,[6] although believing it safe, prefers the carbolized ligature, and thinks, that "even the most experienced operator will find that it takes a long time to close all the vessels in a large stump by torsion . . . and that much more handling of the parts is required."

Gross[7] is doubtful as to its safety upon large arteries, and Ashhurst[8] is strongly opposed to it, being of the opinion that "the only truly efficacious means of arresting the hæmorrhage from large arteries are compression and ligation."

No method of treatment is justifiable which does not offer the greatest possible security against the occurrence of secondary hæmorrhage. Such an accident is too serious to admit of taking any chances, and, with opinion thus divided, it would certainly seem better to use the ligature upon such vessels as the femoral, carotid and axillary, and to confine the use of torsion to the smaller vessels, where the question of safety can be disregarded. But, with this limitation, there is still a very wide field for its use; for, where the femoral is tied once, numbers of ligatures are being put upon vessels small enough to come strictly within the limits of safe torsion.

Twisting is done in one of two ways. In limited torsion the artery is seized with one pair of forceps, drawn out of its bed, grasped at its deepest point by a second pair, and the portion between the two forceps is then twisted four to six times.

In illimited torsion the artery is seized and twisted with one pair of forceps, without the aid of the second pair — the fixed point against which the twisting is done being found in the tissues in which the vessel is embedded.

After having tried illimited torsion upon small vessels, some time ago, it seemed to me, that probably one reason why it is not in more common use, is because, with our present forceps and method of performing it, torsion is a slow and clumsy proceeding; and it occurred to me, that if an instrument could be made which would twist quickly and effectively, and which, at the same time could be easily handled, that such an instrument might be found useful as a general hæmostatic for the smaller vessels.

My first models had a box of gearing wheels connected with a rod, to which the forceps were attached; by turning a small handle the wheels were set in motion, and the forceps made to revolve rapidly. I abandoned this model for its use required both hands, and it needed too much manipulation. These difficul-

[1] Read at the meeting of the Surgical Section of the Suffolk District Medical Society, May 6, 1891.
[2] The Healing of Arteries after Ligature in Man and Animals.
[3] International Encyclopædia of Surgery.
[4] Practice of Surgery.
[5] The Healing of Arteries after Ligature in Man and Animals.
[6] System of Surgery.
[7] System of Surgery.
[8] International Encyclopædia of Surgery.

ties have been overcome in the model as shown in the accompanying cut. This instrument has the very great advantage of being wholly under the control of one hand, and its mechanism is such, that by a simple up-and-down motion of the box (*g*) over the spiral rod (*e*) the vessel is seized, twisted and released.

Inspection of the cut will show the principle upon which it works, and this can be made clear by a few words of explanation. The instrument is taken with the thumb in the ring at the top, and the first and second fingers in the rings on the box (*g*). The hand is opened and the box pushed firmly down. The arms (*f*) drop over and grasp the ring (*c*), carry it down, and the forceps spring open (as is shown in the smaller drawing).

It is then ready for use. The forceps are placed over the vessel and the box (*g*) is drawn up. The arms (*f*) pull up the ring (*c*) which presses against the upper ends of the forceps and closes them over the vessel. The arms then strike the projection at (*d*), spread open, and leave the ring (*c*) *in situ*, holding the forceps firmly locked. The forceps cannot be again opened until this ring has been pushed down. Torsion is performed by pulling up the box (*g*) three or four times, over the whole length of the spiral rod, that is to say, by closing and opening the hand three or four times. Drawing it up three times gives six full twists, which ought to be sufficient. When the torsion is completed, the vessel is released by again pushing the box firmly down. The arms (*f*) push down the ring (*c*) and the forceps spring open.

Three-fifths of actual size.

This whole performance, namely, seizing the vessel, twisting and releasing it, is perfectly simple and very rapid, as it takes only three to four seconds.

This instrument checks the bleeding, not only from those vessels which have a distinct vessel wall and can be easily isolated, but also from small bleeding points, provided they are seated in tissue which will allow them to be twisted. But in old cicatricial tissue, in the skin, etc., they are bound down, and tend to break off instead of twisting.

Regarding the instrument, it is to be noted that there is no backward rotation. When the box (*g*) is drawn up, the forceps revolve. When it is pushed down, the forceps are stationary. Of course, if the motion were reversed, the vessel would be untwisted, and the torsion of no value. A small ratchet in the thumb piece allows the spiral rod to turn in one direction, but acts as a brake to prevent it from turning in the opposite direction. The box (*g*) contains a brass cylinder, fitting closely upon the grooves of the spiral rod, and toothed at its lower end. When the box is drawn up the teeth engage, making a solid body of the box and cylinder, and the spiral rod revolves; but when the box is pushed down the teeth disengage, and the brass cylinder revolves around the rod which is then stationary.

It is also to be noted that the opening and closing of the forceps is wholly automatic. This mechanism is plainly shown in the cut and needs no explanation.

The forceps (*a*) are the ordinary hæmostatics with short upper ends. They are pivotted on a pin at (*b*) and are held open by a small spring, which cannot be seen in the drawing but which is just below this pivot.

The instrument is cleaned as follows: The pin at (*b*) which pivots the forceps is fastened to a plate. By turning this plate half round, the pin can be pulled out and the whole instrument taken apart. There is no point which cannot be easily reached and thoroughly cleaned. The forceps pull out of the shaft, the ring (*c*) slides off, the shaft is taken off the spiral rod, the box (*g*) removed, and by unscrewing the cap from its upper end, the brass cylinder can be taken out. The arms (*f*) can be taken off, and, if desired, the thumb ring can be unscrewed. To allow of thorough cleanliness the number of different parts has been purposely made large. Some difficulty may be found in putting it together again. To do this: First, put the brass cylinder, with the toothed end *down*, into the box (*g*) screw the cap on, and slide the box upon the spiral rod; second, put the shaft on the rod; third, put the ring (*c*) on the shaft; fourth, push the forceps into place; fifth, re-insert the pin (*b*) and turn the plate to which it is attached back into position.

When taken apart it is complicated. When put together and ready for use, it is not complicated. It is simple, compact and strong.

The instrument has been made for me by Tiemann & Co., of New York. Mr. L. G. Pfarre, of this firm, has taken great pains in the details of its construction, which was very difficult on account of the tendency to friction between the various parts.

It is intended for illimited torsion, and can be safely used upon all vessels cut in any operation:

(1) Upon the forearm and hand.

(2) Upon the leg below the upper third and the foot.

(3) About the head and face.

(4) Upon the surface of the body generally, as for the removal of tumors, for the radical cure of hernia, for plastics, etc.; and this class includes a very large proportion of all operations performed.

In comparing torsion with the ligature, it can be stated that every ligature is a foreign body in the wound at the time it is applied. Until recently, ligatures were treated as foreign bodies, and were removed at a later period of the case. We now know that this is not necessary; that an aseptic ligature can be left in the wound, and that it ought to be taken care of in the healing process, being either absorbed or becoming encysted.

Notwithstanding this great advance in surgical detail, it would certainly be better if all wounds could be closed without containing any knots of foreign material; there is always the possibility that ligatures apparently aseptic, are not so; and, if aseptic, the wound has an extra amount of work in disposing of them. Where only one or two ligatures are applied, this work may be insignificant, but where any number are necessary, it must become an appreciable factor.

In torsion, however, no foreign substance is left in the wound. After torsion by this rapid method, the twisted ends are seen as small, compact knots, and

these are apparently no greater hindrance to healing than are the ends of the vessels which project beyond the ligatures after tying.

Asepsis is more certain than with any form of ligature. The only object which comes in contact with the wound is the forceps; while in tying, in addition to the forceps, we have the ligature itself and the hands of the operator or assistant in tightening the knot.

Primary union ought to be facilitated, for it is obvious that where ligatures are aseptic and therefore innocuous, still, there can be no union of the cut surfaces at the points were they are applied until the foreign element has been removed by absorption or by encapsulation; and this must take a longer time than is needed in disposing of the small knots left by this instrument.

The writer wishes to express his indebtedness to Dr. J. C. Warren, to whom he is under very great obligations for his kindness in giving an opportunity to use the instrument, and to test the method at a number of his operations at the Massachusetts General Hospital, last March. At these trials, which were upon cases where no large trunks were involved, bleeding was successfully and permanently checked.

Several defects in the instrument, which prevented it from working smoothly, were made apparent, and the experience obtained through this courtesy on the part of Dr. Warren, has been of the greatest assistance in perfecting these defects.

Clinical Department.

FRAGMENTS OF GLASS REMOVED FROM THE POPLITEAL SPACE WHERE THEY HAD LODGED FOR OVER THREE YEARS.[1]

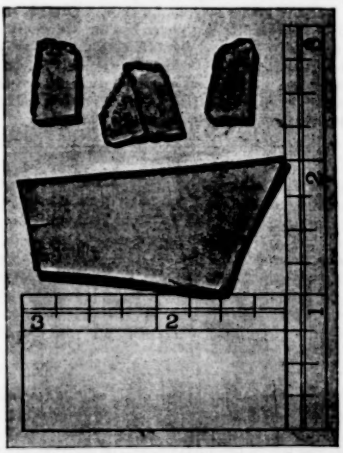
BY G. H. MONKS, M.D., BOSTON.

In February, 1888, F. M., a laborer thirty years old, met with an accident in which his left leg was thrust forcibly through a window-pane, the fragments of broken glass causing a long lacerated wound in the upper part of his calf. He put himself under medical care, and eventually the wound healed. He was not obliged to stop working for any length of time, though he always had an "uncomfortable feeling" at the seat of the wound. Even after the wound healed the uncomfortable feeling persisted, and he was not able to fully straighten his knee or to get his heel squarely to the ground when walking. This left knee being always slightly bent was much in his way when he worked, and it was also especially exposed, on account of its prominence, to injury. While the man was at work one day, about a year and a half after the original injury, a barrel of ashes fell upon this knee. A synovitis followed, but under treatment this soon disappeared.

For the last three weeks the patient has been more troubled than ever by stiffness and pain in the knee-joint, and by the uncomfortable feeling at the seat of the old wound, as well as by his not being able to put his heel to the ground.

Finally, in the Out-Patient Department of the Carney Hospital he was carefully examined by Dr. W. M. Conant, who made the diagnosis of foreign body in the popliteal space and sent the patient for operation into the hospital, where he came under my care in the surgical wards.

At the lowest portion of the popliteal space there was a long scar in the median line. Above this and slightly to the outside of the median line a large, firm, resistant body could be felt. A long and deep incision made in the axis of the limb over the centre of this body revealed a mass of cicatricial tissue in the popliteal space. On incising this a large fragment of glass was found. It was lodged so firmly in position that many incisions through the hardened tissue were necessary to free it. Three smaller fragments also were found deep down in the tissues just behind the head of the tibia. A sharp corner of the large fragment projected through the joint-capsule posteriorly and lay within the joint-cavity just below the external condyle of the femur. The figure shows the pieces of glass in their actual size.



The thickness of the glass was one-eighth inch. The large piece was two inches long and one inch broad at its broadest part. There was no sign whatever of pus in the wound, but an abundance of fibrous tissue. The wound was sewed up, and at the end of the fifth day the stitches were removed. The wound had united firmly by first intention, and on the ninth day after the operation the patient walked home, being able to get his heel squarely on the ground.

He was seen on the street some weeks later and he declared that his left leg was then as sound as his right one.

Remarks. The interest in this case centres principally in the fact that such large fragments of glass can be carried for so long a time within the body and cause so little trouble in the way of inflammation, pain, etc. The inability to straighten the knee and to get the heel to the ground was the principal source of annoyance to the patient, but this was a purely mechanical matter.

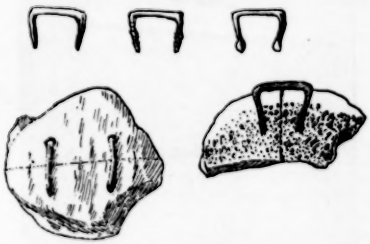
[1] Reported at the meeting of the Surgical Section of the Suffolk District Medical Society, May 6, 1891.

It is said that the domestic pets of the world carry at least thirty per cent. of the common contagious diseases from house to house.

A CASE OF FRACTURE OF THE PATELLA, WITH A NEW METHOD OF WIRING.

BY THOMAS KITTREDGE, M.D., SALEM, MASS.

B. U., fifty-four years of age, fell on a slippery sidewalk on the 17th of January, 1891, landing upon his back without, as far as he knows, striking his knee. He was much surprised to find that he could not stand upon his right leg, and to feel a sharp projection above the knee. He was taken to the Salem Hospital, where a transverse fracture of the patella was found. The fragments were easily brought together, and held by a figure-of-eight bandage, the leg being put upon a ham splint. At the end of eight weeks, union seeming firm, with very slight separation of the fragments, he was discharged, at his own request, with the admonition that he should use the greatest care. One month later, having returned to his post as janitor of a building, while going down stairs, he felt his knee giving way, and was precipitated to the landing below. He was put to bed for two weeks, the joint being swollen and painful. At the end of that time thinking, as he says, that it was all well, he got up and was in the act of pulling on his trousers (standing upon his right leg), when he was suddenly thrown to the floor by his knee giving way.



He was brought to the hospital, where I found a separation of the fragments of nearly four inches. I told him that any attempt at repair without an operation, was out of the question, and advised wiring the fragments, to which he consented. The operation was done on the 18th of May, under irrigation with an aqueous solution of bichloride of mercury 1–6000. The knee was but little swollen, and free from heat and pain.

An incision was made transversely across the joint from one condyle to the other, passing through the fibrous capsule between the fragments of the bone and into the joint-cavity, which was found full of fluid and old blood-clots. There was no connection between the fragments, the broken ligamentous band lying between. The joint, including the upper synovial pouch, was carefully washed out, and all débris removed. The fractured surface of each fragment was sawed off with a fine saw, and the ragged edges of the capsule trimmed with scissors. The joint was quickly washed out again, and the sawed surfaces brought into close apposition, and held there while two holes, on each side of the fracture, were drilled to the depth of half an inch. These holes converged a little towards the opposite ones, and were about three-eighths of an inch from the sawed edge. Into these holes two stout wire rivets a little less than an inch long, with prongs bent at right angles, three-eighths of an inch long, were placed. My object in bevelling the holes being to have the wires more securely held in place, and less likely to slip out, but as it was necessary to elevate the outer edges of the patella to do this, and as it proved to be somewhat difficult, another time I should bore the holes perpendicularly and make the rivets bulb-pointed or serrated, and a little smaller than the drill, so that callous would be thrown out about them and hold them securely in place. After the rivets were driven in, the periosteum, which had previously been carefully turned up and pushed back, was brought down and stitched together with fine catgut. A continuous catgut suture was put in the fibrous capsule, and the skin united with silver wire. Rubber drainage-tubes were placed in the angles of the wound, the leg was put upon a ham splint, and the usual antiseptic dressing applied to the knee. The dressing was removed at the end of six days, and the wound, with the exception of the openings for the drainage-tubes, found to have healed by first intention. The tubes were removed and these openings speedily closed by granulation. The leg was kept upon a ham splint for eight weeks, when a silicate of soda bandage was applied, and the patient allowed to go about on crutches.

The present condition, nearly six months after the operation, is as follows: The joint is in nearly a normal condition, there is but little swelling or enlargement, the surface of the patella is smooth, the line of fracture cannot be felt, there is no movement of the fragments, and the movements of the joint are unimpaired. If not a bony union, there is a very close ligamentous one, and the rivets are still in place.

The wire used was of galvanized iron, but another time I should use copper or platinized silver, as less likely to corrode. The advantages of this method over the ordinary way of wiring the patella, it seems to me are: closer apposition of the fragments, thereby assuring a stronger union, with less danger of the wires tearing out, greater expedition in doing the operation, a smaller external wound, less disturbance of the joint, while the wires on the upper surface lie flatter than wires that have been twisted together and then bent down.

The chief danger from the operation of wiring the patella lies in the suppuration that is likely to follow opening of the joint. By this method, provided there is not great laceration about the joint, the deeper parts need not be disturbed, and consequently the danger of suppuration will be less. In cases where the periosteum or the fibrous capsule is not wholly torn through, the fragments of the bone might be pressed together and the rivets applied *through* the capsule or periosteum.

I believe that if the proper antiseptic precautions are faithfully observed, wiring of the patella is not only justifiable, but is the only treatment that offers a satisfactory result in cases where the fragments have been long separated, cannot be approximated, or a ligamentous union having formed, separation again takes place.

THE AMERICAN HOG. — Another instance is reported in which the American hog has been unjustly maligned by jealous German officials. A more complete investigation in the case of a hog filled with trichinæ showed that he was of German birth, and that his flesh had been eaten raw.

New Instruments.

A NEW FORM OF SPLINT FOR THE THUMB.[1]

BY JOEL E. GOLDTHWAIT, M.D., BOSTON.

This splint will be found useful in securing fixation of the thumb, and possesses the special advantage of not restricting the motions of the wrist or fingers, and hence can be worn without serious inconvenience to one's business. It can be used in any conditions where fixation is demanded, and is especially useful in the lesser injuries, such as "base-ball thumb," where the more bulky outside splints would not be tolerated.

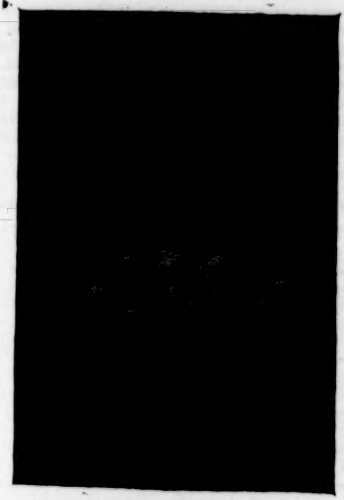


Fig. 1.

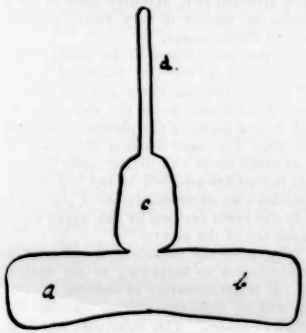


Fig. 2.

It is made of tin, and can be cut out by any one in a very few minutes. The pattern of the splint is shown in Figure 2, and the following dimensions may be found convenient; they are the measurements for a splint for the average adult hand.

The base (*a b*) should be seven inches long and one and one-half inches wide. The thumb-piece (*c*) should be two inches long, and one and three-quarter inches wide in the widest part. The tongue (*d*) is a narrow strip one-quarter of an inch wide and four inches long.

The thumb-piece and base are bent, at their point of juncture, to an acute angle, while the tongue is bent around the base piece and holds the two parts rigid. The wings (*a* and *b*) are bent to clasp the hand while the sides of the thumb-piece are rolled up to form a trough for the thumb to rest in. It is held in place by two strips of adhesive plaster, one around the thumb and the other around the hand. No padding is necessary, but to prevent chafing the edges of the splint should be bound with adhesive plaster.

[1] Shown at the meeting of the Surgical Section of the Suffolk District Medical Society, May 6, 1891.

Medical Progress.

RECENT PROGRESS IN ANATOMY.

BY THOMAS DWIGHT, M.D.

OSSIFICATION IN THE HEAD OF THE HUMERUS AT BIRTH.[1]

Dr. Herbert R. Spencer has examined the head of the humerus on both sides in 180 fœtuses, many of which, however, were immature. He suggests that we may assume that those weighing six pounds or more were mature, of course, however, without a view to statistics. He found a bony nucleus in 14 cases, usually of the size of a "No. 6" shot. Of the fœtuses 40 weighed seven pounds or more, and nine of these had the epiphysis. Dr. Spencer states that all the 14 in which bone was found were probably mature, and all of them had a bony centre at the lower end of the femur. The conclusions which he draws are necessarily guarded. They are:

"First, that a centre of ossification is not rarely met with in the head of the humerus of mature fœtuses at the time of birth.

"Second, that in large fœtuses (that is, weighing seven pounds or more) the centre is commonly observed — in my own cases, in at least 22.5 per cent. This frequent occurrence in large still-born children would seem to have some medico-legal importance."

Investigations of this kind deserve great encouragement. The statements concerning ossification seem to be to a great extent copied from one book to another. Some of them are utterly wrong, and pretty nearly the whole subject needs revision.

THE DIFFERENCE OF THE HEIGHT STANDING AND SITTING.[2]

Professor Ricardi, of Modena, reports observations on 1,185 persons of all ages, of whom 584 were males and 601 females. The sitting height is almost always greater than half the total height. Thus it exceeds it in 95.4 per cent., equals it in 2.7 per cent., and falls below it in 1.9 per cent. In adult males the sitting height is 52 per cent., and in females 53.2 per cent. of the standing height, showing that in women the trunk

[1] Journal of Anatomy and Physiology, xxv, July, 1891.

[2] We are indebted for this to an abstract by Dr. Collignon in l'Anthropologie, 1891, tome ii, No. 4.

with the head is relatively longer than in man. In children the proportion is still greater. There is at first no difference in the sexes. The adult proportions appear at the age of thirteen or fourteen. It is shown that of two persons of the same age (and presumably of the same sex) the taller one has relatively the shorter body; which is simply saying that tall persons have relatively longer legs.

THE DIFFERENCE OF HEIGHT IN THE UPRIGHT AND RECUMBENT POSITIONS.[3]

This is an old question which M. Ch. Fére has studied again. He examined 165 persons (the sex is not mentioned), dividing them into groups. The mean difference seems to be rather less than one centimetre. We are surprised to find that neither the height nor the age seems to have much influence. The greatest difference observed was three centimetres.

THE SHAPE AND SIZE OF THE TRACHEA.[4]

Dr. Lejars has published a very suggestive paper, which deserves serious consideration. While it may be questioned whether his method is sufficiently accurate to permit his results to be accepted, it is hard to doubt that he has called attention to an important fact generally overlooked. Indeed, the fact itself was pointed out by Dr. Nicaise (in the *Revue de Médicine*, November, 1889), from whose work Dr. Lejars quotes. Nicaise found that if the front of the trachea of a dog had a window made in it, the mucous membrane of the posterior wall projected forwards as a longitudinal fold, and that the ends of the (so-called) rings were in contact. This, at least, was the condition of the animal when calm, but if it cried out the trachea dilated and the membraneous fold disappeared. Speaking, apparently, of man, Dr. Nicaise continues: "In the normal condition when the breathing is calm, the windpipe is in contraction during both stages of respiration. The ends of the rings are in contact and the borders of the rings touch. The membranous portion is drawn together, and the mucous membrane over it makes a slight projection into the interior of the tube. In forced respiration, in crying, sighing, singing, etc., the trachea dilates and lengthens during expiration,[5] the larynx rising; the trachea contracts and shortens during inspiration,[5] and the larynx descends." It is needless to say that this contraction is the work of the involuntary muscular fibres of the windpipe and of its elastic tissue. The fact which Lejars insists upon is that the dead windpipe, which has been measured and described, is a very different thing from the living one. So far, good. Now, how are we to measure the living one, or, at least, estimate its measurements? Dr. Lejars's plan is to put the ends of the rings in contact, allow the posterior mucous membrane to fall forward in a fold, and then trace the outline and measure the diameters. We do not know any better method, except perhaps in cases when it might be possible to freeze the body during the *rigor mortis*, but we feel that this one is hardly satisfactory. In spite of Nicaise's statements one is inclined to ask, Is it certain that the ends of the rings are actually touching? Lejars seems to think it is so; we will follow him. We do so the more readily that though we question the accuracy of the method we do not doubt the general correctness of his views. The following table shows the averages of his measurements of 11 windpipes taken both in the dead and the living position.

	Dead.	Living.
First ring	16.7 mm.	12. mm.
Third ring	16.8 mm.	11.7 mm.
Sixth ring	17.5 mm.	11.5 mm.
Ninth ring	18. mm.	11.8 mm.

A glance shows that the difference is considerable. There are two types of windpipes, those with a large and broad and those with a narrow posterior membraneous portion. It is evident that the former will show the greatest differences. Moreover, this membranous portion grows broader from above downwards, and this accounts for a peculiar difference between the dead and the living trachea. The former grows larger from above downwards; the latter has its greatest size above. It is to be expected that in older persons the difference will be less, as with advancing age the cartilages lose their elasticity and the muscles their power.

In further support of his views Lejars refers to the experience of surgeons who have found the introduction of the tube after tracheotomy impeded by the prominence of the posterior mucous membrane.

THE SUSPENSORY APPARATUS OF THE PLEURA.[6]

The closure of the top of the chest has been variously described; some authorities finding a fibrous septum which has even been compared to the diaphragm, others denying any such structure. Dr. Sébileau denies it entirely. He finds, however, several structures, of which there are many varieties, muscular or fibrous, passing from the spine and ribs to the top of the pleura, which together constitute the suspensory apparatus. He describes it as formed by two bundles, more or less mixed below, but quite distinct above. One is superficial, superior and internal; the other deep, inferior and external. The superficial one is usually muscular, but sometimes fibrous. About as thick as one of the *lumbricales* of the hand, but varying a good deal, it arises from the transverse process of the seventh cervical vertebra, and sometimes from the sixth also, descends and spreads out on the top of the pleura, is attached to it, and then goes to the first rib. Sometimes the muscle is very small, sometimes it is replaced by fibrous tissue.

The deeper part seems to be always fibrous. It arises externally to the one described from the first rib and divides into an outer and an inner branch. The inner branch runs under the superficial one, mixing with it, and going to the pleura, sometimes also to the first rib. The outer division is weaker than the inner, its outer fibres run to the inner border of the first rib, but all are attached to the top of the pleura. He describes also an occasional band passing from the bodies of the lower cervical or the upper dorsal vertebræ to the top of the pleura.

He very properly considers the former more important structures as belonging to the system of the *scaleni*. It is not necessary to consider various details brought out by Sébileau, whose careful dissections deserve high praise. The structure, however, is not as new as he supposes. The writer begs to present an extract from his book entitled, "Frozen Sections of a Child," published ten years ago.

"According to Zuckerkandl[7] the (subclavian) artery

[3] Comptes Rendus de la Société de Biologie, 1891, No. 27.
[4] Revue de Chirurgie, Paris, Avril, 1891, No. 4.
[5] Surely these terms have been inadvertently transposed.—T. D.
[6] Bull. Soc. Anat., Paris, 5th Série, tome vi, July, 1891.
[7] Zeitschrift für Anatomie und Entwicklungsgeschichte, Bd. ii.

and the plexus are generally separated by the scalenus minimus (long known as an anomaly), which arises from the transverse processes of the sixth and seventh cervical vetebræ, or the latter only, and from the upper border of the first rib. It runs to be inserted into the same rib between the structures just mentioned, but it is attached also to the top of the pleura. Its chief purpose apparently is to strengthen and tighten the latter. Sometimes the place of the muscle is taken by fibrous bands, which, indeed, had been observed by Sibson."

AN ALLEGED NEW LIGAMENT OF THE HIP.[8]

Dr. Bellini, dissecting at Clamart, thinks he has discovered an undescribed ligament of the hip-joint. He begins by pointing out that, as a rule, those which have received names are after all only thickenings of the capsule. His new ligament is more distinct, being sometimes more or less detached from the capsule. He finds it constantly, and states that his researches have been verified by Dr. Sébileau. We give his account in his own words: "This new ligament of the hip is a strong one. In most cases, as I have said, it is free in its course from the fibrous capsule; but in some subjects it is seen to mingle with it in a part of its extent, near its lower third. Its place is then marked by a strong thickening of the capsule.

"It arises above the cotyloid border, from the lower edge of the reflected tendon of the *rectus femoris*, runs from above downwards, and from behind forwards towards the anterior inner border of the great trochanter, below and a little in front of the tendon of the *gluteus minimus*, with which it tends to fuse. In dissecting the joint one often destroys it in removing this tendon of the *gluteus minimus*, which is, no doubt, the reason why it has remained unknown to anatomists till now.

"It is triangular and broad in its upper portion, then it becomes round as far as its insertion to the great trochanter." He goes on to say that this ligament is sometimes so strong that it cannot be pulled out. He proposes to call it *ligament tendino trochanterien*.

In Morris's excellent "Anatomy of the Joints," we find the following passage in which we incline to think the same structure is referred to, though the descriptions do not quite agree. "Between the ilio- and the ischio-femoral bands, the capsule is stout and strong, and with it here, near the acetabulum, is incorporated the long tendon of the rectus; while at the femoral end the longitudinal fibres composing it are concentrated to a narrow insertion into the ridge on the front border of the trochanter, close to the gluteus minimus. It is this portion of the capsule which is greatly strengthened by a strong fasciculus of fibres passing from the under surface of the gluteus minimus to the capsule half-way between the iliac and femoral attachments; while further forwards, and near to the outer edge of the ilio-femoral ligament, a tendinous band, closely blended with the surface of the capsule, stretches between the upper extremity of the tendon of origin of the vastus externus, and the long tendon of the rectus." This is a point of anatomy to which the writer of this Report gave particular attention a few years ago. Though he has seen the arrangement described by Morris he was not able to believe it constant. He finds it very difficult to accept Bellini's views.

[8] Bull. Société Anatomique, Paris, 1891.

NEW SUBDIVISIONS OF THE ABDOMINAL CAVITY.[9]

Henke remarks that we are used to think of the abdomen as distended, but that we get more correct ideas of its topography and of its natural subdivisions by considering it as flat; by taking as normal the condition it presents in a thin, young subject. He would divide its cavity into four parts, distinguished from each other by three narrow spaces through which they communicate. The highest chamber is in the concavity of the diaphragm separated by a narrow transverse cleft at the level of the umbilicus, from the other three. It contains the liver, spleen, pancreas, duodenum, and the whole of the stomach when not abnormally distended. It contains also the transverse colon, though its middle portion is pretty close to the boundary. The remainder of the abdomen is divided into a middle portion, continuous with the cavity of the pelvis, and two lateral ones which are separated from it by narrowings opposite the psoas muscles. These lateral portions correspond therefore to the iliac regions, and the lower portions of what is commonly called the lumbar regions. The transverse narrowing between the three lower and the one upper chamber is, indeed, very narrow when the abdomen is flat. The most interesting part of the paper treats of the position taken by the folds of small intestines. He believes that its upper portion lies in the left lower space with the folds arranged in the main transversely, and the lower portion in the middle space with the folds disposed more vertically. He states that often (referring, we suppose, to thin subjects), on opening the abdomen one needs only to feel a little about the left psoas between the folds that cover it, to be able to separate them naturally into two masses, one to the left, the other to the right, which join only at the lower part. The left mass is the upper part in transverse folds, and the right the lower in vertical ones.

While we incline to believe that there is some foundation for these views, it must be remembered that the question is not an easy one to settle. One or two irregular folds may confuse a plan that is, in the main, simple; and again, any one with a "view" is in danger of letting his imagination delude him. It is to be hoped that further studies will be made.

THE RELATION OF THE INTERNAL EPIGASTRIC ARTERY TO THE ABDOMINAL WALL.

Dr. Rudolf Trzebicky,[10] the author of this paper, had the misfortune to puncture either this artery, or a considerable branch of it, in tapping the abdomen. He chose the spot advised by Monro, the middle of a line from the navel to the anterior superior spine of the ischium. This induced him to investigate the question of the fitness of this spot. He examined in all 36 bodies. In a series of 23 bodies in which the abdomen was flat, that is, not distended, he found the artery running over the point in question in five, in one of them on both sides. In three cases the artery was less than one centimetre distant. In seven cases (in two on both sides) a muscular branch would have been in the way. The next series comprised 10 cases, the abdomen was prominent from ascites or fat. In two of these the artery crossed the point of election (once on both sides), and once was only one-half centi-

[9] Archiv. für Anat. et Physiol.; Anat. Abtheil., 1891, heft. 2 and 3.
[10] Zür Wahl der Einstichstelle bei des Paracentese der Bauchhöhle. Arch. fur Klin. Chirurgie, Bd. xli.

metre away from it. Moreover, in six a large branch crossed the spot.

The author experimented on three subjects, to find out what effect the distention of the abdomen would have on the position of Monro's point. This was done by first marking the point, and then injecting water through the navel. He found that the point was displaced a little downwards and more or less outwards. He does not, however, attach much importance to this. He concludes that in most cases this point is a safe one, but still that in a considerable number either the main vessel or a branch is endangered. As a rule, the artery crosses the line from the umbilicus to the spine at the junction of its middle and inner third. The position of the artery is rarely the same on both sides. As the artery runs in the sheath of the *rectus*, its course, to a great degree, depends on that muscle. Still the relation is not a constant one, for in some cases the artery lays nearer the middle line on the side on which the artery was most displaced outwards. The place of origin of the epigastric from the iliac seems to have no influence on its subsequent course.

Dr. Trzebicky is inclined, on anatomical grounds, to advise the *linea alba* for paracentesis. He points out, however, that it is important to keep strictly to the median line, as a strong anomalous branch may be found close beside it, which has been wounded with a fatal result. It is, however, very uncommon. If the *linea alba* be not chosen, he advised the outer half of the line from the navel to the iliac spine.

THE BRANCHES OF THE THYROID AXIS.[11]

Among the questions sent out a year ago by the committee of Collective Investigation of the British Anatomical Society, the first was as to the "mode of origin of the following vessels, usually described as branches of the thyroid axis, namely, inferior thyroid, suprascapular, ascending cervical and transverse cervical arteries." We do not see why the posterior scapular was not included in the question, for, as the answers show, it could not be kept out of it, and, moreover, from its tendency to spring from the third part of the subclavian, its origin is of practical interest to the surgeon. No less than 544 answers were received. They are tabulated by an ingenious system of diagrams. We can mention only the types which occurred most frequently.

(1) In 160 cases (29 per cent.) the thyroid axis gave off at once the suprascapular, then the transverse cervical, which divided into the superficial cervical and the posterior scapular, and finally the inferior thyroid giving off the little ascending cervical. This is the arrangement given as normal in Quain and Gray.

(2) In 121 cases (22 per cent.) there is no transverse cervical, but the superficial cervical which represents it arises at almost the same point as the suprascapular. The posterior scapula arises from the third of the subclavian.

(3) This type is almost the same as the first. It occurred 48 times (8 per cent.). The difference is that the axis divides almost at once into its three branches, instead of giving off the suprascapular and the transverse cervical successively.

(4) This was found 39 times (7.1 per cent.). There is no transverse cervical. The suprascapular gives off the superficial cervical. The posterior scapular springs from the third part of the subclavian. We have interpreted these diagrams so as to call the little ascending cervical a branch of the inferior thyroid. It would be possible, as is sometimes done, to describe the continuation of the axis as dividing into the inferior thyroid and the ascending cervical. There are 32 other diagrams, but as none of them represent as many as five per cent. of the cases, we pass over them. These diagrams are very clear, and bear witness to the great industry of the committee.

[11] Journal of Anatomy and Physiology, vol. xxvi, October, 1891.

Reports of Societies.

AMERICAN PUBLIC HEALTH ASSOCIATION.

NINETEENTH ANNUAL MEETING, held in Kansas City, Mo., October 20–23, 1891.

FIRST DAY — MORNING SESSION.

The Association convened in the auditorium of the Warder Grand Opera House, and was called to order at 10 A. M. by the President, FREDERICK MONTIZAMBERT, M.D. F.R.C.S., D.C.L., Quebec.

Prayer was offered by the Rev. SAMUEL N. NEEL.

After considerable preliminary work, the reading of papers was proceeded with.

DR. D. MCDONALD, of Kansas City, read a paper on

THE CAUSE AND PREVENTION OF INFANT MORTALITY,

in which he gave statistics showing that infant mortality soon after birth was twenty per cent. One of the principal causes was exposure to a low temperature — a chilly room soon after birth. He had been present when it was necessary to wear an overcoat in a room where a newly-born child was exposed to bathing. Forcing sleep by soothing syrups to overcome the effects of this exposure was another evil. Another trouble was the forcing of food, such as crackers, water and whiskey into the young, inert stomach of the newly-born child. The mother who refused to nurse her child from selfish reasons deserved the censure of the community. Statistics show that in the first year the infant mortality, when the child is fed by artificial food, is fifty per cent. With natural food the mortality was but ten per cent. The best artificial food was pure cow's milk. Sterilization by chemical process was not thoroughly a success because vital principles cannot be supplied by chemical process, but sterilization was preferable to impure milk.

No starchy substance could be digested in the infant stomach. Starchy infant food is converted by the chemical processes of the stomach first into sugar, then alcohol, and then acetic acid. No sensible farmer would attempt to feed a calf hay. Hay is the natural food for a cow as much as solid food is for man. Improper dressing, such as thin clothes, was also a prolific source of infant disease.

PROF. W. W. DANIELLS, of Madison, Wis., thought that no one should be allowed to sell milk in cities unless he put his dairy establishment under the control of the sanitary authorities.

GLANDERS IN MAN

was the subject of a paper by DR. JOSEPH SHARP, of Kansas City, Mo.

He classed glanders with acute infectious diseases, such as tuberculosis. The especial feature of the pa-

per was a report of a case which occurred in his practice, and in which he pointed out the difficulty of diagnosis in this obscure disease, and gave an outline of the methods for microscopic examination together with the best methods of cultivating the bacillus of glanders. The paper recommended that, for preventing glanders, persons who came in contact with horses having open sores or discharges from the nose, should disinfect the hand with a solution containing a tablespoonful of equal parts of glycerine and carbolic acid in a quart of hot water, or ten grains of corrosive sublimate in a quart of water. In his report of the fatal case which he had treated, that of a painter, who became inoculated through a sore on the hand while handling an afflicted horse, the speaker aroused much interest.

DR. PAUL PAQUIN, of Battle Creek, Mich., in the discussion, reported a collection of seventeen cases of glanders in man, which he had collected in the State of Missouri while living there. As an instance of the virulence of the poison, Dr. Paquin spoke of one man who, driving behind an affected horse, was struck in the eye by a spray from the beast's nostrils, a case of glanders developing rapidly and terminating in the man's death.

CHIEF JUSTICE HORTON, of Kansas, read a paper on

THE NECESSITY FOR MORE STRINGENT LEGISLATION TO REPRESS EMPIRICISM.

He said that the mountebank of the nineteenth century, with brazen face and clarion voice, travels the length and breadth of the land proclaiming himself as "Diamond Dick," "Indian Bill," or by some other equally euphonious and ambiguous title, as he asserts his skill and disposes of his wares. It might not be justifiable homicide to compel him to swallow his own darksome nostrums, but the present laws are insufficient for his repression and, however beside himself he may become, we can hardly hope that he will so far forget his villainy as to administer unto himself that which he so recklessly deals out to others.

To protect the public, the American Public Health Association should recommend the enactment of statutes excluding from the medical profession those who are not competent by learning, skill and experience to practice, and punishing by imprisonment any who violate the provisions. No one should be permitted to practice medicine or engage in surgery unless authorized to do so by a competent board of Government or State examiners.

DR. R. HARVEY REED, of Mansfield, O., said it was no easy matter for the medical profession to eradicate quacks or pretended medical men. Whenever the subject of quackery was brought before the legislature, the profession had to contend with two prominent factors, namely, the quack themselves, who furnished large quantities of money, and, second, the general press of the country. Why the press? Because the quacks paid the newspapers more money for advertising than the regular medical profession, consequently the press aided the quacks in trying to down the law.

The next paper read was on

WATER-SUPPLY AND PUBLIC HEALTH,

by MR. ALLEN HAZEN, of Lawrence, Mass., in which the author dwelt principally upon the typhoid fever and cholera germs which infect impure water. Typhoid fever and cholera bacteria are taken into the system through food and drink. Pure water is therefore a necessity. If water is absolutely free from sewage it can be depended upon as being comparatively pure, although many waters not polluted by sewage have been known to breed disease. Flowing streams will partially purify themselves. Reservoirs and long channels, where water flows and becomes aerated, will not always purify it. Some system of filtration is therefore imperative, and the question to be decided is the best means of filtration. Several systems were described, but all were said to be more or less defective.

At the close of this paper, DR. HENRY B. HORLBELK, of Charleston, S. C., presented some vital statistics from the Southern States, showing the death-rate among the colored population to be much greater than that of the whites, and offered a resolution asking the governmental statisticians in preparing their reports to arrange them so that this fact may be shown. No action was taken on the resolution.

EVENING SESSION.

At this session appropriate addresses were delivered by GOV. DAVID R. FRANCIS, of Missouri; GOV. L. U. HUMPHREY, of Kansas, and the HON. JOHN T. PEAK, of Kansas City, Mo. Following these came the

PRESIDENTIAL ADDRESS

by DR. FREDERICK MONTIZAMBERT.

Dr. Montizambert said, to the medical men of Kansas City and vicinity the meeting was meant in part as an appeal to quicken interest in the more purely preventive work of the profession, to increase interest in the organization and working of the coast quarantines and health boards by which people are affected; the sewerage of cities; the disposal of garbage and refuse; the purity of water-supply; the infectious diseases of animals now known to be closely related to those of man, as well as other much broader questions of modern sanitation.

To the non-medical of all ages, sexes and conditions it is an appeal to take a lively and an active part in the great crusade against dirt and disease. In the words of Sir Spencer Wells, "Instruct your mayor and corporation, your clergy, and your own household, that every case of typhoid fever or scarlatina, of diphtheria or small-pox, of measles or whooping-cough, can no longer be looked upon as natural and providential: but that the existence of such preventable diseases is a proof of ignorance and negligence, and a disgrace to the country, to the town and the family."

Every one can do a little to make one home or one room bright, more cleanly and more wholesome. Sunlight, pure air and thorough cleanliness are natural enemies to disease germs. These cannot live where they have not their proper food, which is found in dampness, darkness, mould and dirt. There is no sounder philosophy than the old saying that, "There is more health in a sunbeam than in drugs, more life in pure air than in a physician's skill, and that sunlight may fade your carpets, but better that than have its absence fade your cheeks."

The President then paid a tribute to the memory of such members as had died since the last annual meeting. He then passed in review the various contagious diseases as battled with by the health authorities of the country, together with the experiments entered into to overcome them. Asiatic cholera, influenza,

cancer, and diphtheria were all touched upon, as well as disinfection and immunity.

SECOND DAY. — MORNING SESSION.

DR. PAUL PAQUIN, of Battle Creek, Mich., read a paper on

VACCINE AND VACCINATION.

Dr. Paquin touched first upon the necessity for absolutely pure vaccine, and told of some of the diseases that accrue from impure vaccine. The doctor had tested on rabbits, guinea-pigs and fowls over one hundred vaccine specimens. In these tests he said he had found such forms of bacteria as the bacillus pyogenes fœtidus, the staphylococcus pyogenes aureus, the bacillus septicus, and gangrene micrococci. These, he said, produced abscesses, gangrenous lesions, septicæmia and pyæmia.

DR. CHARLES N. HEWITT, of Red Wing, Minn., spoke of unfavorable results from using bad vaccine in his State and of the difficulty in obtaining good vaccine, and gave his personal experience.

DR. YESI, of Mexico, spoke of compulsory vaccination of Mexico. Human vaccine alone was used. Lower animal vaccine is not cultivated. Better results from human than animal vaccine are obtained. A serious small-pox epidemic has not visited that country in about twenty-five years.

DR. L. F. SOLOMON, of New Orleans, La., replied that in Louisiana each child must show a vaccination certificate before being allowed to attend school. About fifty per cent. of the primary vaccinations were successful. He favored the use of bovine virus.

DR. DELOS FALL, of Albion, Mich., read a paper on

THE DISPOSAL OF GARBAGE AND REFUSE.

He spoke of the intimate relation between typhoid fever and the accumulation of waste organic matter. The method used in New York is taking the waste out to sea and dumping it. Philadelphia recommended cremation. Chicago objected to the use of waste in filling vacant lots and then building houses on them. San Francisco recommends cremation. Baltimore has dumps, which are objectionable, and which will be removed as soon as a better method can be found. Cincinnati gives its waste to a dessicating company, which is under contract to remove the same. In Charleston the city removes its own garbage; carts it out in the morning, and generally gets through about noon. This waste is dumped into a salt-water marsh. The cost is about $19,000 a year. Milwaukee pays $23,316 a year for collecting garbage by hand, and $15,000 a year for disposing of the same. The Merz system of disposal of the garbage is used. Garbage is at present disposed of by dumping it into Lake Michigan, much to the disgust of the citizens, because the Merz system contract has expired. In Washington the removal is carried on by the contract system.

DR. EDWARD CLARK, of Buffalo, New York, made a report on the collection and transportation of garbage and refuse in cities. He advised full police power for the sanitary service of large cities. A galvanized-iron tank holding about two or three bushels is the best receptacle for holding household garbage. The refuse tank must not be placed on the street or sidewalk, but the collector should be compelled to go in and get it, remove the contents and replace the cover. For transporting, garbage carts are preferable for short, and wagons for long hauls. The beds should be made water-tight and should be flushed after each dumping. Any driver who failed should be instantly discharged. The bed should be covered with iron.

EVENING SESSION.

The first paper was upon

RABIES,

by DR. J. J. KINYONN, of the United States Marine Hospital Corps. He said the disease was transmitted almost wholly by the canine and feline species. The disease prevails all over the world, except in Australia, where it is not known. He regretted that so little was known of its prevalence. He opposed the idea that the disease is confined to warm weather, the statistics showing that the greater number of cases occur in December and May. He discussed Pasteur's system and its success. Recognition of the disease is not easy in any animal in the early stages. He advocated the establishment and enforcement of strict quarantine regulations in order to eradicate the disease.

DR. P. C. REMONDINO, of San Diego, Cal., read a paper on

AMERICAN CLIMATES AND THEIR PHYSICAL EFFECTS.

He said that it is well known that European immigrants soon lose their ruddy cheeks and bright eyes, with a certain loss of spirits, when they come to this country. They live in happy disregard of all hygiene or science. In changing climate they followed no national rule whatever for the really necessary change of diet. He then extolled Southern California and compared it to the Garden of Eden.

A paper on the subject of

ANIMAL DISEASES,

was read by MR. ERNEST L. DUNDAS, United States veterinary inspector at the Kansas City packing-houses. He spoke strongly against the evil of diseased cattle being shipped to market. As soon as a farmer discovers that tuberculosis is about to ravage his cows, he immediately ships them off to market to get rid of them before they die on his hands. He recommended the police supervision of all milk dairies.

DR. WALTER D. GREEN, of Buffalo, said that, while it might not be incorrect that the disease was quite common and deserved close watching, still the fact should only urge the physician to more earnestly fight against the spread of disease among his patients.

DR. PETER BRYCE, of Toronto, limited his remarks to tuberculosis in milk, and the manner in which the disease is most commonly transmitted to consumers. In Canada, he said they never breed their milch cows, and in one city they never use a milch cow after she once goes dry; she is immediately sent to the butcher.

The great question is how to tell a cow when she is so afflicted. It seemed to him that in view of the startling figures that there are 15,000,000 cows daily supplying the country with milk, and the fact that in certain abattoirs it has been shown that five to ten per cent. of the cattle killed are tuberculous, there should be a most rigid and regular inspection of all milch cows, as is due the public.

NEW ORGANIZATION OF THE SUPREME BOARD OF HEALTH OF MEXICO,

formed the theme of a paper submitted by DR. DOMINGO ORVANANOS, of the City of Mexico. In this

paper the outline of work covered by the Mexican Supreme Board of Health was given, showing a most complete system of supervision, a system which on its face would tend to make it one of the most thorough in operation in any country. One exceedingly good feature is the sending of a surgeon-physician with every ship leaving Mexican ports, who shall be held responsible for the sanitary condition of the vessel, and who shall be obliged to report to the Mexican consul at every port where the vessel may touch, and obtain from him a clean bill of health. This move was done in view of the fact that Mexico is preparing to meet the reciprocal treaties of all countries, thus calling for the service of an extensive maritime navy.

The session was brought to a close by a paper entitled,

LAND HABITATION AS A PUBLIC HEALTH MEASURE,

read by DR. GEORGE HOMAN, of St. Louis, Mo.

The paper showed the benefits which would arise by the individual ownership of homes, as that would render less likely any communicable disease as well as render easier the fight against disease by admitting of isolation, a most desirable feature in combating disease.

THIRD DAY. — MORNING SESSION.

DR. PETER H. BRYCE, of Toronto, read a paper entitled,

THE PRESENT POSITION OF THE MILK-SUPPLY PROBLEM FROM THE PUBLIC HEALTH STANDPOINT, AND SOME PRACTICAL METHODS FOR SECURING SAFE PUBLIC SUPPLIES.

Briefly, the summing up of the precautions necessary to healthy milk were:

(1) It is especially desirable that a system of periodic veterinary inspection be exercised in addition to the dairyman's inspection.

(2) Strong views should be held and exercised regarding the nature and quality of food for cows. All decomposed foods, as those which are liable to undergo fermentation, should be wholly avoided. The best foods are well ripened grains and grasses.

(3) The stables of the cows are a point of great importance. Too often dark, damp, ill-ventilated and crowded pens have been the home of this chief of our food supplies. It is quite possible to keep, even on a large scale, a dairy stable free from the ordinary disagreeable stable odors. The water-supply to the cows is of equal importance.

(4) The care of the milk at the time of taking and subsequently is of all points at once the most difficult and the most necessary to supplying a wholesome milk. De Claux has said, "Cleanliness is everywhere the *sine qua non*." This means almost a revolution amongst farmers and dairymen. The sterilizing of all cans and bottles by steam or dry heat and the boiling of all strainers will be necessary.

(5) The delivery of milk is of prime importance.

(6) When milk has reached the consumer, it must be placed in a refrigerator or promptly consumed.

FOURTH DAY.— MORNING SESSION.

DR. J. RAMON YCAZA, of the City of Mexico, read a paper entitled,

A FEW CONSIDERATIONS UPON THE PROGRESS OF PUBLIC HYGIENE.

DR. NAZARIO LOMAS, of Moreles, Mexico, followed with a paper entitled,

NOTES ON THE HYGIENE OF RICE CULTURE.

Moreles is the great rice-producing State of Mexico, and the paper touched upon the sanitary effects of this culture. The vast rice swamps were declared by the author to be most unsalubrious.

The report of the Committee on

CAR SANITATION,

was read by PROF. W. W. DANIELLS, Chairman.

He said the great difficulty in the heating arrangements of cars was that all systems thus devised are for heating alone, and that ventilation is not particularly sought.

DR. R. HARVEY REED, of Mansfield, O., said that if the public asked for these things, as it demanded fast trains and elegant upholstered cars, it would get them.

PROF. DANIELLS thought that cars should be made differently. Instead of covering Pullman cars with expensive tapestry they should be furnished with rattan or leather, as, for instance, the cars on some of the suburban trains.

DR. JOSEPH SHARP recommended comfortable air cushions that could be taken out and cleaned.

DR. CHARLES N. HEWITT, of Minnesota, read a paper on

THE EXISTING METHODS OF DEALING WITH IMMIGRANTS AS RESPECTS INFECTIOUS DISEASES IN ENGLAND AND ON ENGLISH SHIPS.

The notification of infectious diseases among immigrants to the United States was the duty of the national sanitary authorities to the sanitary service of the State, and an example of such an arrangement between the United States authorities and the State Board of Health of Minnesota, was cited.

DR. A. N. BELL, of Brooklyn, followed with a paper on

THE BATH AND ITS ADOPTION.

The Executive Committee reported to the Association two resolutions which were passed. One was by Dr. Homan, of St. Louis, declaring it the sense of the Association that State and Provincial inspection of the production of vaccine virus be established. The other resolution asks the establishment of a Federal Department of Health, to have at its head a Secretary of Public Health — a cabinet officer at Washington.

DR. HENRY B. BARKER, of Lansing, Mich., introduced a resolution to the effect that the Association hold its meeting in 1893 in the City of Chicago, and that, so far as possible, the occasion be made an international congress of hygiene and public health; which was adopted.

The following officers were elected for 1892: President, Dr. Felix Formento, New Orleans, La.; Vice-Presidents, Drs. Walter Wyman, Washington, D. C., and Domingo Orvananos, of Mexico; Secretary, Dr. Irving A. Watson, Concord, N. H.

Place of meeting, City of Mexico; date to be fixed by the Executive Committee.

ST. MARK'S HOSPITAL, NEW YORK. — The reading given by Sir Edwin Arnold in aid of this hospital realized the sum of $1,203.73.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

G. H. MONKS, M.D., SECRETARY.

MEETING Wednesday, May 6, 1891, DR. A. T. CABOT in the Chair.

DR. CABOT reported

THREE CASES OF COMPOUND FRACTURE OF THE PATELLA, IN WHICH THE BONES WERE WIRED WITH GOOD RESULTS.[1]

DR. J. C. WARREN said: I have been somewhat interested in this operation myself. I am inclined to agree with Dr. Cabot that one is not justified in opening the knee-joint in a case of simple fracture, for I think that it is not necessary. I have had a little experience with Malgaigne's hooks and needles, which can be passed through the tendon on either side of the patella above and below. Wyeth's modifications of Malgaigne's hooks are a great improvement over the instrument with which we are familiar in the text-books. With antiseptic precautions the instrument can be adjusted without ether, with a little cocaine above and below the bone, and then drawn together with a screw, and if an antiseptic dressing is applied to protect the points they do not cause suppuration. The cases in which I had the opportunity of trying the treatment were not suitable cases. They were cases of old fracture. The fragments came together perfectly well but did not hold together well afterwards. The one case I followed up afterwards came to wiring. It was done by Dr. Richardson a year afterwards, and the result was very satisfactory although the wires did not remain in. The silver needles also worked very well, and brought the fragments nicely together. The cases in which those needles were used I have not followed up since they left the hospital. I did not think at the time that bony union would be obtained because the fractures were somewhat old at the time the needles were used, but the interesting part in those cases was the fact that apparatus of that kind could be used to approximate the fractures without bringing on any disagreeable complications, and in a fresh fracture I should think they would be almost as efficient as wiring, therefore they would be suited to cases of simple fracture if it were desired to use them for that purpose.

The other day I was called to the hospital to see a case of compound fracture of the patella into the joint. There was a very small opening not much larger than would admit the forefinger, but on laying open the skin, and enlarging the wound through the skin a somewhat larger subcutaneous wound was found, and below that was about a quarter of the patella on the right-hand upper corner which was separated, and when the joint was pressed blood oozed up through the wound in the bone. I washed out the joint with a weak solution of corrosive sublimate, and wired it pretty much after the method Dr. Cabot described first, and hammered the wire down and cut it off. The patient had a slight aseptic fever lasting about two or three days, and is making an uninterrupted recovery. It is now about two weeks since the operation.

OPERATION FOR THE RELIEF OF A VERY SEVERE FACIAL NEURALGIA.

DR. S. J. MIXTER showed a patient sixty-three years of age, on whom he had operated twelve days before, removing both the second and the third divisions of the fifth nerve through the same external incision, at the foramen rotundum and foramen ovale respectively. There had been no pain and the wound had healed without suppuration. This is the second case operated on by Dr. Mixter in this manner.

DR. MONKS showed some

FRAGMENTS OF GLASS REMOVED FROM THE POPLITEAL SPACE WHERE THEY HAD LODGED FOR OVER THREE YEARS.[2]

DR. J. C. WARREN reported

TWO CASES OF AMPUTATION AT THE HIP JOINT,[3]

and showed one of the patients operated upon.

DR. NEWELL: I would like to ask if in this case there was any apparent cause.

DR. WARREN: I don't remember. It dates back some ten years.

DR. NEWELL: It was not necessarily of tuberculous origin?

DR. WARREN: My impression is that it was of tuberculous origin, although I find that no microscopic examination was made of the bone at the time to identify tuberculous condition. It was a disorganized knee-joint. I assumed it was tuberculous.

DR. NEWELL: I think this case is a very important one, as showing that a surgeon should never lose his courage in the most desperate sort of case that is not malignant. I remember seeing this boy at the time Dr. Warren operated, and it seemed to me the case represented a forlorn hope.

I remember one other case that taught the same lesson, that a surgeon should never fail to do an operation that might do some good. This case came to the hospital while I was house-officer. A boy had a barrel of cider roll on his outstretched arm, and the arm was black and gangrenous. That was in the days of septic cases. The boy seemed almost moribund, and gas had so developed in his sides and under the pectoral muscles that there was perfect crepitation. In that case Dr. Warren thought he could save the boy by making free incisions. The incisions were made and inside of two weeks that boy was walking about the yard.

In reply to a question as to the desirability of leaving behind as much periosteum as possible, in order to cause new bone to form and thus enable the patient to wear an artificial limb, DR. WARREN said that he left considerable periosteum, but he could not say how much. In one of his cases there was considerable new bone formation.

DR. CABOT said that his experience with the operation had been that there was more difficulty in taking away the periosteum than in leaving it; and that the bone in such cases shells out easily and leaves the periosteum behind.

MR. G. R. TUCKER (by invitation) demonstrated a method of his own for the

STERILIZATION OF CATGUT.[4]

DR. F. M. BRIGGS read a paper on

TORSION,[5]

and showed an automatic forceps, of his own invention, for rapid torsion.

[1] See page 537 of the Journal.

[2] See page 543 of the Journal.

[3] See page 538 of the Journal.

[4] Publication postponed.

[5] See page 541 of the Journal.

Dr. Warren: I can testify to the usefulness of this instrument, having seen Dr. Briggs use it in several operations, the most important of which was in an amputation of the breast, and dissection of the axilla. The disease was very extensive. A large ulcerated mass the size of a fist, was showing on the inner hemisphere of the breast, involving the entire breast besides, therefore a complete amputation of the whole organ had to be performed leaving a large open wound. Then there was a long incision through the axilla with dissection of the axilla, and any surgeon knows how many vessels are wounded during such an operation. There were two arteries only that were tied, and they were down in between the ribs, and could not be got at very well except by a pair of hæmostatic forceps with a sharp nose. There was one large vein I thought more prudent to tie. The little defects in the instrument brought out by the operation seemed to me to be minor ones, and when it is perfected it ought to be quite a useful instrument.

Dr. Newell introduced the subject of

A KIND OF ŒDEMA SOMETIMES FOLLOWING THE INJECTION OF COCAINE.

He said: I would like to speak of an experience I had to-day in the use of cocaine. We have been using one per cent. solution of cocaine for small operations, and to-day I removed a small fatty tumor from the forehead. The parts got a little painful during the operation, and I put in a little more of the solution. After the wound, which was about an inch long, had been closed all but one stitch, there developed what I supposed was a hæmatoma, from my needle going through and cutting a small vessel. I put in the scissors and supposed I would squeeze out a clot of blood. Nothing came out, but I saw oozing from the edges of the wound some serum. This was, I suppose, due to vasomotor paralysis after the use of cocaine. It was very striking and very rapidly developed.

Dr. Mixter: A friend of mine, a physician, told me that in using cocaine he has seen an enormous œdema caused almost immediately from vasomotor paralysis. I have never seen a case myself.

Dr. J. E. Goldthwait showed

A NEW FORM OF SPLINT FOR THE THUMB.[1]

By means of this splint the thumb could be fixed but motion at the wrist could be allowed.

Dr. H. L. Burrell said that he had used the splint in practice and had found it one of the most satisfactory devices that had been brought to his notice.

Recent Literature.

The Science and Art of Obstetrics. By Theophilus Parvin, M.D., LL.D. Second Edition. Philadelphia: Lea Brothers & Co. 1890.

This standard work, which may well be called a classic, first appeared in 1886. The second edition, which was issued late in 1890, has received numerous additions and alterations, but without material increase in size. Fifteen new wood-cuts have been added. From the scientific stand-point the work is sound in its teachings, and the parts on practice are replete with wisdom and common-sense. Altogether, it is a book of which its accomplished author may well be proud.

A Text-Book of Chemical Physiology and Pathology. By W. D. Halliburton, M.D., B.SC., M.R.C.P., Professor of Physiology at King's College, London, etc. With 104 Illustrations. London and New York: Longmans, Green & Co. 1891.

It is now six or seven years since a complete text-book of physiological chemistry has appeared in the English language. During this time great advances have been made in this department, and chemistry at the present day occupies so prominent a place in investigations connected with the causation and treatment of disease, that the importance to the medical student of a knowledge of this subject, and particularly of physiological and pathological chemistry, is unquestioned. Dr. Halliburton's book, which is one of unusual excellence, comes to us therefore at a very opportune time.

Part I. which is devoted to Methods of Research and Analysis, contains a short sketch of the chief operations performed in chemical investigation, those specially available for physiological work being dwelt on rather more fully.

In Part II, the Chemical Constituents of the Organism are described. This division of the book contains a short chapter on inorganic compounds, one on the simpler organic principles, and chapters on the carbohydrates, proteids, albuminoids, ferments and fermentations, pigments, ptomaïnes and leucomaïnes.

In Part III, which is devoted to the Tissues and Organs of the Body, the author discusses, in order, the cell, the blood in health and disease, the blood of invertebrate animals, the lymph and allied fluids, respiration, muscle, epithelium, the connective tissues in health and disease, the nervous system, and the organs of the body.

In Part IV, Foods, and the Chemical Processes concerned in Digestion, Absorption, Assimilation, and Nutrition are described; and in Part V, the Urine, and the Secretions of the Skin and Allied Structures. Under the head of General Metabolism, in Part VI, the chemical exchanges which occur in living tissues are considered in their relation to one another.

The book contains 852 pages full of information, 104 illustrations, several hundred references to original sources of information, and, what is by no means a trifling matter, a good index. It supplies a want long recognized, and will be highly valued by all who are interested in this department of science.

The Medical Student's Manual of Chemistry. By R. A. Witthaus, A.M., M.D. Third edition. New York: William Wood & Co. 1890.

The principal changes in this edition are to be found in that portion of the work which treats of the principles of chemistry and chemical physics, which has been somewhat extended; and in the chapters on the chemistry of the carbon compounds, which have been in great part rewritten. The orthography of certain words has been modified in accordance with the views expressed in the report of the committee of the Chemical Section of the American Association for the Advancement of Science. The report of this committee is printed in full in an appendix. The present edition is a distinct improvement over the preceding one. The book has been prepared solely for the use of medical students, and we consider it, after several years experience with it in the class-room, the best one to recommend to such.

[1] See page 545 of the Journal.

THE BOSTON

Medical and Surgical Journal.

THURSDAY, NOVEMBER 19, 1891.

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THE SURGERY OF THE LIVER.

THE surgery of the liver has made signal progress of late years under antiseptic methods, and now operations which a generation ago were not thought of, are daily performed. Abscesses are freely opened, and hydatid cysts punctured, and resection of considerable portions has in some instances been done; the gall-bladder has been now hundreds of times opened for the removal of calculi, and impacted stones have been removed from the cystic and choledochus ducts by crushing or by cutting. Cholecystectomy, or extirpation of the gall-bladder, though not a very feasible operation, has in several cases been done successfully.

We are indebted to Lawson Tait and Langenbeck for the earliest operations on the gall-bladder. Up to October, 1884, cholecystotomy, or incision of the gall-bladder for obstructive diseases of that vesicle and its ducts, had been performed thirty-five times with a mortality of ten (see paper by Musser and Keen in the *American Journal of Medical Sciences* for October, 1884). In discussing the various methods of operating, Dr. Keen, in the article above mentioned, expresses a preference for the oblique-transverse incision parallel to the right costal margin, and this is also the method advocated by Terrillon, who gives notes of five successful cases in the *Bulletin Général de Thérapeutique*, February 15, 1891. It is needless to say that the vertical incision over the site of the gall-bladder, as advised by Janeway, is preferred by some surgeons. In the *Edinburgh Medical Journal*, October, 1889, Lawson Tait reports fifty-five operations of the kind; in fifty-two the patients recovered, but the three deaths were from other causes than the operation. At the Clinical Society of London for the same year, Mayo Robson communicated a paper on fourteen cases of cholecystotomy which he had performed, eleven being for gall-stones, one for empyema of the gall-bladder, and two for distended gall-bladder, due to cancer. All the patients recovered. In the *Lancet*, January 10, 1891, Robson reports nine more cases without a death, and strongly recommends the operation whenever there are repeated attacks of biliary colic apparently due to gall-stones which do not yield to a definite course, not necessarily very prolonged, of medical treatment. The testimony from German and French surgeons is equally favorable to the operation, which, in the estimation of Langenbeck, should always be performed, and that *early*, rather than *late*, when the ordinary medical means fail to cure.

Instead of the usual way of treating the gall-bladder after its incision and the removal of the obstructing calculus, namely, the formation of a biliary fistula by attaching the opening in the bladder to the lips of the wound in the abdominal wall, cholecystenterostomy, first proposed by Nussbaum, is sometimes practised. The small intestine is opened at the highest point below the duodenum, and the margins of the opening in the gall-bladder are attached to the edge of the opening in the bowel. This operation was first successfully performed by Kappeler, afterwards by Winiwater, and has lately succeeded in the hands of Socin. It was a case of obstruction to the ductus communis choledochus. A free incision was made along the border of the rectus. The peritoneal cavity was opened, the gall-bladder drawn forward, opened, and a pint of gall evacuated. A cholecystenterostomy was then determined upon. The jejunum was drawn out, an incision an inch and a quarter long made in it, and this opening sewed to that in the gall-bladder. The result was most gratifying.[1] Mayo Robson also successfully operated in the same way for biliary fistula in March, 1879.

There has been considerable discussion as to when cholecystectomy should be preferred to the simple incision of the gall-bladder and the creation of a fistula (which is generally only temporary), and it may be said that no general rule can yet be laid down. The surgeon, as Terrillon says, should be guided by the nature of the lesion. Lawson Tait declares cholecystotomy preferable in the great majority of cases, and with this most authorities agree. Cholecystectomy demands a certain number of conditions rarely realized; in fact, if the gall-bladder and cystic duct are inflamed and adherent to the hepatic tissue, if this duct, dilated by calculi, is, so to speak, incrusted in the liver, the sac can neither be safely extirpated, nor made to terminate in the intestine. The case is the same when an antecedent inflammation has glued the surface of the gall-bladder to the neighboring parts (Terrillon). Mayo Robson would limit cholecystectomy to cases of contracted gall-bladder which cannot be sutured to the parietes, or where perforation from ulceration has occurred, or in empyema where the tissues are thin and unable to bear suture; also where, after a cholecystotomy, a mucous fistula persists, owing to stricture of the cystic duct.[2] This writer finds cholecystotomy ordinarily so simple and safe an operation, that he would have little patience with a physician who, in a case of repeated attacks of biliary colic did not resort to it.

[1] American Journal of Medical Sciences, October, 1888, p. 418.
[2] International Clinics, April, 1891.

With regard to lithotrity, this is sometimes feasible where during an operation, the cystic duct or choledochus is found occluded by a stone; if this be soft it may be crushed between the thumb and finger, or if rather hard, the crushing may be performed with guarded forceps, and the fragments by digital manipulation are made to pass into the gall-bladder where they are readily removed.

The liver has been often opened for abscesses. A sufficiently deep, free incision is made under antisepsis to evacuate the pus, and the abscess sac is washed out every day by antiseptic lotions.

Exploratory punctures into the substance of the liver by means of the aseptic aspirator needle are made with safety, and the presence of hydatid cysts may be thereby determined. Terrillon cites the case of a man who had several hydatid cysts in the liver and in whom he practised successively, at varied intervals, more than sixty exploratory punctures with the Dieulafoi needle. The patient got well after the opening and antiseptic lavage of three large pouches occupying divers regions of the liver.[2] Exploratory incisions, after a laparotomy made for this purpose have also been effected, and deep abscesses have thus been reached and drained.

As for that rare and formidable operation known as resection of the liver, or rather, of portions of the liver, there are a few instances on record where such ablation has been performed with varying success.

Naturally the surgeon would be deterred from excision of part of so vascular an organ by the difficulty of controlling hæmorrhage. Langenbeck, in fact who was one of the first to attempt so hazardous an operation, came near losing his patient by secondary hæmorrhage, though the lobe which he removed was distinctly pediculated, and Wagner (Nineteenth Congress of the German Society of Surgery, 1890), had a similar case which proved fatal. The operation was the section and firm ligature of a pediculated lobe of the liver which had undergone alterations due to syphilis. At the end of twenty-four hours, the patient died from hæmorrhage by giving way of the friable tissue of the pedicle.

Lawson Tait, on the other hand, reports several cases where he has successfully removed parts of the liver; he always takes the precaution to touch the surface of section with a solution of perchloride of iron.

Terrillon cites from the *Bulletin Médical*, December 10, 1890, a case of ablation of a gumma of the liver. The operation was performed by Hochenegg, a Hungarian surgeon. The tumor, which was as large as an apple, was seated beneath the false ribs and was very painful; it was removed by laparotomy. Hochenegg divided the hepatic tissue by the thermo-cautery. Despite this precaution, there was considerable oozing of blood, necessitating tamponading with iodoform gauze. The tampon was fixed to the anterior part of the abdomen by means of a steel rod.

[2] International Clinics, April, 1891.

Terrillon reports a successful case of his own, which he describes as "ablation of a portion of the liver full of hydatid cysts." It was a cystic tumor of the liver, hard, painful, fluctuating, and projecting seven centimetres below the costal margin. The abdomen was opened by a transverse incision, fifteen centimetres in length, parallel with the lower border of the false ribs; a tongue of liver projected into the opening; the most prominent portion, which corresponded to the hydatid tumor, was seized with a Nelaton forceps, and a strong rubber band two centimetres in diameter was passed around the base and knotted as tightly as possible, the knot being secured by a stout silk ligature. This elastic band was seen to produce by its constricting power a veritable furrow in the hepatic tissue, completely isolating the diseased segment. This was now brought out of the abdominal wound and fastened outside, very much like the pedicle in ovariotomy; the lobe thus ligated was about as large as the closed fist. The abdominal wound was now closed by deep sutures, the margins of the flaps being brought tightly around the furrow made by the rubber band so as to shut off the abdominal cavity. The usual antiseptic dressings were now applied. The result was entirely satisfactory.

All the substance external to the elastic ligature soon became sphacelated and shrunken. On the fifth day, the rubber band was cut and the necrosed mass dissected out. The peritoneal adhesions proved to be firm; there remained at the site of the wound only a little cup-shaped depression, at the bottom of which appeared the remains of the sphacelated pedicle. The parts were kept disinfected with chloride of zinc and iodoform gauze. In ten days the patient was well.

THE NEW YORK WATER-SUPPLY.

THE few hours' rain on the 11th did not have much effect in increasing the Croton water-supply, and unless the rain of Tuesday has made some impression, most serious consequences are likely to ensue in New York, notwithstanding all the efforts that are being made to prevent waste on the part of the public. Already it has been found necessary to greatly reduce the pressure in the pipes, and in consequence the water does not run at all on the upper floors, except where the houses are provided with tanks and pumps, in many parts of the city. The whole trouble arises from the fact that while ample facilities have been provided, by means of the two aqueducts now in operation, for conveying water to the city, no adequate provision has, as yet, been made for permanent storage of the water-supply. The supply of the Croton water-shed is entirely sufficient for the needs of New York for many years to come, being equivalent to about 300,000,000 gallons a day for the entire year. Since the new aqueduct was opened the amount delivered has been at no time over 165,000,000 gallons, and it has been calculated that the present requirement of the city under full pressure and with no stint upon the supply would be at most 200,000,000 gallons daily.

While, however, the aggregate annual flow of the Croton water-shed is equivalent to 300,000,000 gallons a day, it is very fluctuating, and what is needed is simply a system of storage reservoirs adequate to receive the surplus of wet times and hold it against periods of light rainfall; so that the supply may be equalized throughout the year and delivered through the aqueduct without diminution of the daily flow. This should certainly have been carried out before this, as it is now eight years since the legislature passed the act providing for an increased supply of water for the city, and this included not only a new aqueduct to convey the water, but also for the construction of one or more dams and reservoirs to retain such water. While several storage reservoirs have been planned and are either completed or in course of construction, the engineers have shown that no adequate provision can be made under the circumstances without the erection of a high masonry dam, above the old Croton dam, and it seems probable that the present threatened water famine will stimulate the authorities to commence the work at once.

MEDICAL NOTES.

THE NEW YORK PRACTICE LAW. — The Attorney-general of New York, has decided that by the law which has recently gone into effect, all physicians having foreign diplomas only, and desiring to practice in the State, must undergo an examination by the State Medical Board before a license can be issued.

THE DUTY ON OPIUM. — The present duty of twelve dollars a pound on opium, is such an inducement to smugglers that they are taking every sort of risk on the Canadian frontier, and are spreading demoralization among the United States agents by the big bribes which they are able to offer to get it through. It is believed that an attempt will be made as soon as Congress meets to reduce the duty to perhaps two dollars.

COLORED FEMALE PHYSICIANS. — The *Medical Record* of November 7th contains a remarkable letter from Dr. Reyburn, of Washington, in which he offers documentary evidence that the Medical Department of Harvard University is in the habit of graduating colored female physicians. We are authorized to state that no woman, of any color, has ever graduated from this school. Another error appears in the statement that the three years' graded course was established in 1879; whereas it went into effect in 1871–72.

WASHINGTON WATER. — Dr. Weir Mitchell, in a letter to the *Medical News*, says that as he considers Washington the best place for meetings of the Congress, he wishes to defend the water: "The water was not to blame. I drank no drop of it, except as it was used boiled in coffee. I know of others who suffered despite this and every other precaution; also, manifestation was too general to have been due to food, for it affected people living in hotels and in private houses. Finally, it existed over a large part of the country — in Newport, R. I., for instance, whither I went after a week in the Maryland hills, where also it was sharply felt. The cause, therefore, was not the product of Washington, nor should it be allowed to influence us when again we come to summon, for a like purpose, the remarkable body of men which constituted the Congress."

THE NEW YORK JOURNAL OF GYNECOLOGY AND OBSTETRICS. — Under this title a new monthly journal appears this month for the first time. It is edited by Drs. A. H. Buckmaster and J. D. Emmet, with the collaboration of Drs. T. A. Emmet, T. G. Thomas, A. J. C. Skene, C. Jewett, W. H. Baker, E. C. Dudley H. A. Kelly and J. C. Reeve. The object is to give the profession a journal of the highest grade, treating of the title-subjects or allied matter, to contain original articles, society reports and reviews. The opening number contains a very good likeness of the late Dr. Barker, with an obituary notice.

THE TEXAS SANITARIAN, a monthly journal of preventive medicine and hygiene, appears for the first time with the November issue. It is published at Austin, Texas, under the editorship of T. J. Bennett, M.D., and contains seventy-two pages of interesting reading matter.

AN INFIRMARY FOR PRINCETON COLLEGE.— President Patton and a committee of the faculty of Princeton College have sent circulars to the alumni and friends of the college showing the needs of an infirmary for the university and soliciting subscriptions. A site on the college grounds has been set apart, and the plans of the building, drawn by Surgeon J. S. Billings, have been adopted by the committee. The building will be constructed of brick, containing accommodations in wards and single rooms for twenty patients, with all modern hospital arrangements. It will cost $30,000, in addition to which an endowment of $20,000 is proposed to pay running expenses, and that poor students may receive its benefits free of charge.

THE PROSPECTS OF A MEDICAL MAN IN AUSTRALIA. — The editor of the *Australasian Medical Gazette* warns medical practitioners in the older countries that Australia is over-supplied with medical men, and that the proportion in relation to the population is probably greater than in England. Certain disappointment, perhaps great poverty and distress, inevitably await a medical stranger who goes to those colonies without intimate connection with influential residents, unless he has ample means. It should also be remembered that the prizes there for the best men are nothing like equal to those in capital cities of the United Kingdom. Any vacancies in the junior ranks are at once filled by graduates of the local schools.

NEW YORK.

THE STEAMER "ALLIANCA" which arrived from Brazil on November 12th, had a somewhat eventful passage. On October 14th she sailed from Santos, where yellow fever was epidemic at the time, and two

days after leaving Bahia, the ship's surgeon, Dr. H. R. Rosenthal, died of the fever and was buried at sea. Dr. Rosenthal was a young New York physician, and was making his first voyage in the capacity of ship's surgeon. Although ill himself, he had been most assiduous in his attentions to several of the crew who developed yellow fever before reaching Bahia, and who were transferred to the hospital at that place. After Dr. Rosenthal's death three others of the crew were taken with the fever, and two of them died before the vessel reached Barbadoes. Here a new surgeon was obtained, Dr. Homer Clark, and soon after the *Allianca* left that port, which was on the 5th of of November, the third man died and was buried at sea. Every precaution to prevent the spread of the disease was taken, and none of the passengers were taken with it. When the ship reached the New York Quarantine there was apparently no yellow fever on board, and she was allowed to proceed to her dock in Brooklyn. Shortly after landing, however, it was discovered that the ship's barber was suffering either from malarial or yellow fever, and he was sent to the hospital for contagious diseases at Flatbush. According to the latest accounts, the diagnosis was still somewhat uncertain, and the case did not seem to be a very severe one; but the ship was again thoroughly fumigated before the unloading of her cargo was permitted.

Baths for the Poor.— During the past week some cheap baths have been opened to the public by the managers of the Hirsch Fund in New York. As in the People's Baths recently established by the Association for Improving the Condition of the Poor, the rain or shower bath is employed, and the prices for a bath are three and five cents.

The Charities Review. — The first number of the *Charities Review*, which is to be the organ of the Charity Organization Society, has just been issued in handsome form by the *Critic* Company, and contains a number of valuable articles. Among these are papers by Dr. Alfred Shaw on Municipal Lodging Houses; by Myer S. Isaacs, President of the Trustees of the Hirsch Fund, on the work that has been accomplished during the past year through the liberality of Baron Hirsch; by Dr. Edward Everett Hale, on the Prevention of Pauperism; and by Warren Spalding, Secretary of the Massachusetts Prison Association, on the Massachusetts Drunkenness Law. The *Review* is to be published monthly from November to May.

The National Academy of Sciences held its annual meeting at Columbia College, on November 10th, 11th and 12th. On the evening of the 10th President Low, of Columbia, gave a reception to the members, and the second evening, Mrs. Draper, widow of the late Prof. Henry Draper, entertained them at her house, where Professor Pickering, of Harvard, gave an account, illustrated by stereopticon views, of the work in astronomical photography, which is being done under the Henry Draper Memorial Fund.

Miscellany.

THE NEXT INTERNATIONAL MEDICAL CONGRESS.

At the recent meeting of the Italian Congress of Internal Medicine initial arrangements were made for the next International Medical Congress, which is to meet in Rome, in 1893.[1] In what month of the year it will be held is an important question not yet decided. At midsummer, or in the early autumn, Rome is not likely to be found attractive to those who dread subtropical heat in a malarious vicinity. If held in the spring, or the late autumn, many teachers of medicine will not be able to attend. The last fortnight of September is what the majority of Italian practitioners would suggest as the most convenient time for all parties, and this will most probably be the decision of the Organizing Committee. Meanwhile, that committee has just been formed. Dr. Baccelli, at a meeting of the heads of the profession, was nominated President by acclamation. On his declining the honor, the question was put to the vote, when, out of a ballot of twenty-six, he obtained twenty-five "si," as against one "no," which was himself. He had, therefore, to bow to the overwhelming importunity of his colleagues The post of General Secretary fell, almost unanimously, to Professor Maragliano, of Genoa. Presidents of the various Sections were next elected. These Sections are twelve in number; and, as the results of the various ballots, the following gentlemen were appointed: Anatomy, Professor Antonelli; Physiology, Professors Albini and Albertoni; Pathology, Professors Bizzozero and Foà; Pharmacology, Professor Cervello; Clinical Medicine, Professors Baccelli, Maragliano, Murri and Bozzolo; Surgery, Professor Bottini; Obstetrics, Professor Morisani; Psychiatry, Professors Morselli and Tamburini; Ophthalmology, Professors Devincenzi and Secondi; Dermo-Syphilopathy, Professors Campana and Barduzzi; Forensic Medicine, Professor Tamapia; Hygiene, Professors Pagliani, Celli, and Canalis. The importance attached to this great medical parliament is already apparent in the number of physicians and surgeons who have intimated their intention to assist.

ENGLISH DEGREES.

The various degrees which carry with them a license to practise medicine in the United Kingdom, are a bewilderment to many Americans. The title "Doctor" is supposed to indicate the degree of M.D., given by the universities; but this title is often used by courtesy to men holding the lesser university degree of M.B. The Society of Apothecaries grants the degree of L.S.A., and this is generally considered the lowest degree allowing the holder to practise. The most puzzling degree-conferring bodies to the foreigner are the royal colleges. These are in London, Edinburgh and Dublin. The colleges in London are described by Dr. Winslow Warren,[2] of San Francisco, who has taken the degrees M.R.C.P., M.R.C.S. L.R.C.P. and L.S.A.

The colleges are not teaching institutions, their charters being to grant diplomas. The medical schools

[1] Lancet, October 31st.
[2] Pacific Medical Journal, September.

in connection with the different London hospitals, on the other hand, do not grant diplomas.

The Royal College of Physicians of London grants three distinct degrees. Two of these are obtainable by examination, namely, L.R.C.P. and M.R.C.P.; one, the Fellowship (F.R.C.P.), is an honorary degree bestowed on members of at least four years standing who have distinguished themselves in their profession in original research.

An English medical student must pass a matriculation examination in arts and sciences and be registered by the General Medical Council of Great Britain four years, after this year five years, before taking his degree. He must then enter the colleges and hospitals and be "signed up" for the various examinations. For the degree of L.R.C.P., he must pass three sets of examinations, the last four years after matriculation. An American physician holding the requisite requirements, may go up for the examinations without previous matriculation.

The same conditions apply to the royal colleges in Scotland and Ireland, excepting that women are admitted to the examinations in Scotland and Ireland, but not to those in London.

The examination for the M.R.C.P., of London, is one of the highest and most difficult in Europe. The candidate must have attained the age of twenty-five years. He must first pass the L.R.C.P. examination or possess an equivalent qualification. He must possess an arts degree or pass an additional examination. He then must go through the ordeal of a two days' written and a third day practical examination in a hospital, and then a fourth and fifth day of oral examinations. It would seem that this degree (M.R.C.P., Lond.) is difficult to obtain, as there are only three American gentlemen who have received it on American diplomas.

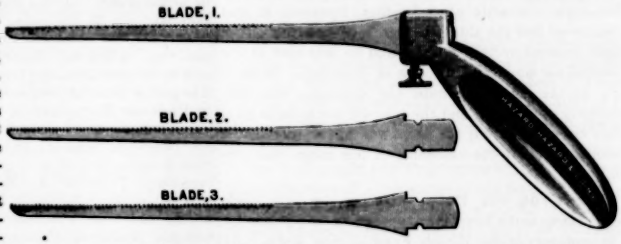
The Royal College of Surgeons grants two qualifications: the membership (M.R.C.S., Eng.), and the fellowship (F.R.C.S., Eng.). Two examinations are held for the M.R.C.S. The first one in twenty-four months after matriculation, and the second in four years (five years after 1891). The fellowship examination is very difficult. A candidate must first be an M.R.C.S., and pass examinations in higher branches of physiology, anatomy, and different branches of surgery. An M.R.C.S. may also be made an honorary F.R.C.S. after twenty years.

The Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England grants the L.R.C.P. of London and the M.R.C.S. of England. The board is composed of members of both colleges. The "examination hall" is a spacious building overlooking the Thames. Its interior is divided into immense halls, where the examinations are held. The laboratories and museums are replete with all the latest appliances and specimens, macroscopic and microscopic, chemical and analytical, etc. This double qualification is the one taken by nine-tenths of the medical men in England. It comprises three examinations. Prior to 1891 the first examination was taken after twelve months, the second after twenty-four months and the final or pass, after four years from registration. Now the time is five years. The examinations are partly written, partly *viva voce*, partly clinical and partly microscopic and chemical. They are held four times yearly, January, April, July and October. At each of the examinations there are from 250 to 500 candidates presenting themselves.

A NASAL SAW.

DR. C. A. BUCKLIN[1] describes this saw as the result of his experience since first introducing this instrument for removing obstructions in the nasal cavity.

The handle is of sufficient size to give one a firm grasp, which is important when the bony deformity is large. Being of aluminium, it is aseptic and light, notwithstanding its size.



This instrument has three reversible blades, six inches long, containing three and one-half inches of cutting teeth. Each blade is designed to overcome special difficulties.

Blade No. 1, or the Bosworth saw, consists of perfectly cone-shaped teeth, thirty to the inch. It is made thin, and binding is avoided by dividing the cutting-power equally between both sides of the teeth.

Blade No. 2, is designed for conditions where it is desirable to cut only as the saw advances. This blade would bind were it not for the fact that the teeth are thirty-two to the inch. They rake sufficiently forward to enable the finger to determine the "rake," as the teeth are drawn over it, while on the return stroke the release is complete.

This blade is very satisfactory for the following reasons: With the head firmly placed against a head-rest, the most natural way to cut with a saw is toward the support. In attempting to remove the inferior turbinated bone entire, the spring of its posterior end frequently causes other saws to bind sufficiently to defeat the operation, which difficulty is not experienced with Blade No. 2. Deformities of the septum which terminate at their posterior end in a delicate ridge will readily catch on teeth which cut on the return, thus springing the septum toward the saw. When this accident occurs a single stroke may cut directly through the septum. These dangers are also obviated by Blade No. 2.

Exceptional conditions may arise where it is desirable to use a saw-blade which cuts on the return stroke, this is provided for by Blade No. 3. This blade is

[1] Medical Record, October 24th.

less frequently useful than either of the others. It can only be used on the turbinated bones in rare cases where Blade No. 2, from some accidental peculiarity in the formation of the bone, cannot be used. Peculiarities in the deformities of the septum may present exceptional cases where this blade will work better than the others. It is, however, liable to spring the septum in an undesirable direction, producing accidents already described. Still the instrument would not be universal without this blade.

Operators should not trust the disinfection of a saw to any means less perfect than boiling water.

THERAPEUTIC NOTES.

Eczema in Children.[1] — In treating the eczema of the face and hairy scalp of fat children Saalfeld recommends that the quantity of nourishment be diminished, and especially that all fatty articles of diet be avoided, constipation being avoided by means of suitable rectal enemata. The crusts which accumulate should be softened with olive oil, and after they have been removed the surface should be anointed with

℞ Acidi borici . . . . . gr. xx.
Zinci ox. . . . . ʒ i.
Vaselini
Amyli pulv. } . . . . . āā ʒ vi. M.

The Absorption of Drugs in the form of Ointments. — In the *Répertiore de Pharmacie*, Dr. Luff has published some experiments which tend to show that lanolin is the best ointment basis when a local action only is required, as this substance prevents absorption; whilst vaseline favors absorption, and so should be employed when it is desired to obtain the general action of a drug applied in the form of an ointment to the skin. The experiments were made with iodide of potassium, carbolic acid, and resorcin mixed with vaseline, lard and lanolin.

Quinine. — To prevent disagreeable effects from large doses of quinine, Dr. Levi,[2] of Central America, recommends that it be given in the following mixture.

℞ Quininæ sulph } . . . . . āā ʒ i.
Potasinæ poric. }
Pulv. capsici . . . . . gr. vi.
Pulv. zingib. . . . . gr. xij.
Sodii bicarb. . . . . ʒ i. M.

Massage of the Stomach in Gastric Dyspepsia. — Cseri[3] employs massage in the treatment of gastric dyspepsia. Two or three hours after a full meal, the patient is placed on his back, with thighs flexed and the mouth open. The gastric region is first very lightly stroked, the force then being gradually increased to a kneading, always in a direction toward the pylorus. The whole process should last about ten minutes. A short massage of the large intestine should end the séance. The only contraindication is the existence of complications, such as ulcer or other conditions which may cause hæmorrhage. This treatment is said to be followed by a pleasant sense of relief and often by refreshing sleep.

To Prevent Rabies, Gautier recommends that wounds caused by the bites of animals be immediately and energetically washed out with oil of turpentine.

[1] Journ. de Méd., April 12th.
[2] Satellite, No. 6.
[3] Rev. de Thérap., April 15th.

Treatment of Typhoid Fever.[4] — M. Hayem gives lactic acid, with or without baths, according to the indications. He prescribes the acid in the form of a lemonade:

℞ Acidi lactici . . . . . ʒ iv-vi.
Syrupi simplicis . . . . . ʒ viss.
Aquæ . . . . . ʒ xxvij. M.
Sig. To be taken in the course of twenty-four hours.

If there is gastric intolerance, the lemonade may be diluted with seltzer-water.

Dr. Tordeus[5] has been applying with considerable success a treatment for typhoid fever in the St. Pierre Hospital, Brussels, which consists essentially of moderate doses of an antipyretic, combined with an antiseptic. Thus, ten grains of acetanilid and an equal quantity of resorcin, or about half that amount of thymic acid, are made up into a five-ounce mixture, with decoction of aloes, and tablespoonful doses administered every three hours. This was found to exert a remarkably beneficial effect not only on the temperature, but also on the general condition of the patients. From trials made with acetanilid alone, it was evident that the antipyretic effect was almost entirely due to the combination with it of resorcin or the thymic acid.

[4] Satellite. [5] Lancet, August 1st.

RECORD OF MORTALITY

For the Week ending Saturday, October 31, 1891.

Cities.	Estimated population for 1891.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Consumption.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	737	275	17.36	14.14	4.90	1.68	7.14
Chicago	1,09,,85-	457	168	24.40	9.02	3.74	9.24	7.04
Philadelphia	1,046,964	434	152	18.40	10.12	1.61	1.61	13.36
Brooklyn	806,343	357	138	13.34	12.76	.87	1.74	10.44
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	181	50	14.30	13 75	1.65	4.95	6.60
Baltimore	434,439	—	—	—	—	—	—	—
Cincinnati	296,908	137	44	22.63	8.03	4.38	5.84	7.30
Cleveland	262,000	103	36	16.49	6.79	1.94	2.91	9.70
New Orleans	242,039	118	31	11.86	18.70	7.65	.85	—
Pittsburg	240,000	100	48	43.00	7.00	7.00	10.00	22.00
Milwaukee	240,000	75	38	30.59	3.99	5.32	1.33	22.61
Washington	230,392	121	38	28.22	7.47	9.13	11.62	4.98
Nashville	76,168	25	3	32.00	20.00	12.00	8.00	—
Charleston	65,168	43	12	11.65	2.33	6.99	—	—
Portland	36,425	13	3	23.07	—	7.69	15.38	—
Worcester	84,625	24	19	24.96	8.32	4.16	4.16	4.16
Lowell	77,696	40	12	10.00	15.00	5.00	—	2.50
Fall River	74,398	—	—	—	—	—	—	—
Cambridge	17,025	22	4	—	4.55	—	—	—
Lynn	55,727	11	4	18.18	—	9.09	—	—
Lawrence	44,654	16	7	18.75	6.25	12 50	—	12.50
Springfield	44,179	15	5	26.66	20.00	13.33	—	13.33
New Bedford	40,733	15	8	6.66	6.66	6.66	—	—
Salem	30,801	9	2	11.11	11.11	11.11	—	—
Chelsea	27,909	7	6	28.56	84.42	—	—	28.56
Haverhill	27,412	3	0	33.33	—	33.33	—	—
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	7	0	—	14.28	—	—	—
Gloucester	24,651	6	4	—	33.33	—	—	—
Newton	24,379	8	3	38.50	25.00	12.50	—	25.00
Malden	23,031	5	0	—	—	—	—	—
Fitchburg	22,037	5	1	—	20.00	—	—	—
Waltham	18,707	6	3	33.33	—	—	—	16 66
Pittsfield	17,281	4	1	50.00	50 00	—	50.00	—
Quincy	16,723	6	1	—	33.33	—	—	—
Newburyport	13,947	8	2	75.00	—	—	—	75.00
Medford	11,079	2	0	—	—	—	—	—
Hyde Park	10,193	8	3	25.00	25.00	12.50	12.50	—
Peabody	10,158	6	0	—	16.66	—	—	—

Deaths reported 3,114: under five years of age 1,120; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 611, acute lung diseases 373, consumption 350, diphtheria and croup 270, typhoid fever 124, diarrhœal diseases 121, scarlet fever 81, cerebro-spinal meningitis 12, whooping-cough 10, measles 8, erysipelas 8, malarial fever 7.

From scarlet fever New York 15, Chicago 11, Cincinnati 7, Philadelphia 6, Brooklyn 5, Pittsburgh and Washington 2 each, Worcester, Lowell and Waltham 1 each. From cerebro-spinal meningitis New York 3, Chicago, Brooklyn and Boston 2 each, Philadelphia, Washington and Lynn 1 each. From whooping-cough New York 4, Brooklyn 2, Chicago, Philadelphia, Pittsburgh and Nashville 1 each. From measles New York 3, Chicago 2, Brooklyn, Pittsburgh and Milwaukee 1 each. From erysipelas Chicago 3, Cleveland 2, New York, Brooklyn and Nashville 1 each. From malarial fever New Orleans 4, Charleston 2, Nashville 1.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending October 17th, the death-rate was 18.2. Deaths reported 3,281: acute diseases of the respiratory organs (London) 237, diarrhœa 182, whooping-cough 75, fever 72, measles 41, diphtheria 38, scarlet fever 37.

The death-rates ranged from 9.4 in Derby to 25.8 in Wolverhampton; Birmingham 19.3, Bolton 20.8, Bradford 18.3, Brighton 19.8, Hull 20.8, Leeds 15.0, Liverpool 21.2, London 16.3, Manchester 21.6, Newcastle-on-Tyne 15.6, Nottingham 19.2, Sheffield 19 1, Sunderland 22.6, Wolverhampton 25.8.

In Edinburgh 14.7, Glasgow 19.5, Dublin 24.6.

METEOROLOGICAL RECORD,

For the week ending November 1, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.		Direction of wind.		Velocity of wind.		Weather.		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
M..26	29 79	51	62	40	80	85	S.W.	W.	12	10	O.	O.	.03
T..27	29.74	46	49	42	97	92	N.W.	N.W.	8	21	R.	O.	.22
W..28	30 44	39	49	28	62	62	N.W.	S.W.	6	12	C.	C.	
T..29	30.29	39	44	38	75	63	69	N.W	N.W.	16	12	O.	C.
F..30	30.22	53	66	41	71	48	69	S.W.	S.W.	12	16	C.	F.
S..31	29.95	64	74	54	47	48	48	S.W.	S.W.	12	20	C.	F.
S... 1	29.86	58	43	32	51	49	50	W.	W.	16	25	F.	O.
☞													

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 7, 1891, TO NOVEMBER 13, 1891.

CAPTAIN WILLIAM R. HALL, assistant surgeon, U. S. A., relieved from Fort Schuyler, N. Y., and assigned to duty at Angel Island, Cal.

ASSISTANT SURGEON PAUL CLENDENIN to be assistant surgeon with the rank of captain, after five years' service, in accordance with the act of June 23, 1874. November 5, 1891.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 14, 1891.

J. D. GATEWOOD, passed assistant surgeon, detached from the U. S. S. "Despatch," and granted two months' leave of absence.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE TWO WEEKS ENDING NOVEMBER 7, 1891.

VANSANT, JOHN, surgeon. To proceed to New Orleans, La., as inspector. November 7, 1891.

MURRAY, R. D., surgeon. To rejoin station at Key West, Fla. October 30, 1891.

PECKHAM, C. T., passed assistant surgeon. To proceed to Memphis, Tenn., as inspector. November 7, 1891.

GUITERAS, G. M., assistant surgeon. To assume command of Gulf Quarantine Station. October 30, 1891.

DECKER, C. E., assistant surgeon. Assigned to duty at San Francisco, Cal. October 30, 1891.

APPOINTMENT.

DECKER, CHARLES E., of Michigan. Commissioned as assistant surgeon by the President. October 27, 1891.

SOCIETY NOTICES.

NORFOLK DISTRICT MEDICAL SOCIETY. — A meeting for scientific improvement will be held at the house of Dr. George H. Francis, Davis Avenue, Brookline, on Tuesday, November 24, 1891, at 7.45 P. M.

Communication: Dr. Edwin P. Gerry, "Dysentery, with Amœbæ Coli in Stools." Drs. R. H. Fitz, G. W Gay and M. H. Richardson are expected to be present and take part in the discussion.

Boston and Albany train for Brookline at 7.15 P. M. Tremont Street cars from Roxbury Station pass end of Davis Avenue every fifteen minutes.

JAMES C. D. PIGEON, M.D., *Secretary*.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held on Monday, November 23, 1891, at the Medical Library, 19 Boylston Place, at 8 o'clock P. M.

Dr. J. H. McCollom, "The Sanitary Condition of Boston, a Statistical Paper;" Dr. R. W. Lovett, "The Treatment of Chronic Sprains of the Finger-Joints."

G. G. SEARS, M.D., *Secretary*.

RECENT DEATHS.

DR. T. BARTON BRUNE died in Baltimore, Md., Monday, November 9th, at the age of thirty-five years, of typhoid fever. He was born in Baltimore, was a graduate of St. John's College, Annapolis, and of the Medical Department of the University of Maryland. At the time of his death he had reached, by his own exertions and abilities, an enviable position among the younger practitioners of the city, with every promise of constantly increasing professional success. He was trusted by his seniors in the profession, greatly esteemed by his contemporaries, and much beloved by his patients among all classes of the community.

FRANKLIN F. PATCH, M.D., M.M.S S., died November 13th, aged seventy-six. He was a native and life-long resident of Boston. He graduated from the Harvard Medical School in 1850.

JOHN C. JAY, M.D., died at Rye, N. Y., November 15th, aged eighty-three. He was for several years a trustee of Columbia College, and was well-known as an authority on shells.

WILLIAM H. VAN WYCK, M.D., Visiting Physician to the Charity Hospital, died in New York, November 15th. He graduated from Bellevue Hospital Medical School in 1865.

OAKMAN S. PAINE, M.D., died in New York, November 8th, aged fifty-three. He served with distinction during the war, and was brevetted colonel for faithful service.

DR. ERNST FLEISCHL VON MARXOW, Professor of Physiology in the University of Vienna, died October 22d, aged forty-five. He was the author of several works on physiology.

APPOINTMENT.

At the last meeting of the Board of Directors of the New York Post-Graduate Medical School and Hospital, J. WEST ROOSEVELT, M.D., was unanimously elected Professor of Clinical Medicine.

BOOKS AND PAMPHLETS RECEIVED.

Leprosy. By George Thin, M.D. London: Percival & Co. 1891.

Bald Heads. By Albert E. Carrier, M.D., Detroit, Mich. Reprint. 1891.

Trap Siphonage and Trap-Seal Protection. By Prof. J. E. Denton. Reprint. 1891.

Essentials of Nervous Diseases and Insanity, their Symptoms and Treatment. By John C. Shaw, M.D. Philadelphia: W. B. Saunders. 1892.

An Introduction to Human Physiology. By Augustus D. Waller, M.D., Lecturer on Physiology at St. Mary's Hospital Medical School. London: Longmans, Green & Co. 1891.

Sanitary Protection Association, Newport, R. I. Report of Committee on Garbage and House Offal Dumping in the Sea, off the Harbor; the Effects on Shell and Food Fishes, Lobsters, etc.

Manual of Physical Diagnosis for the Use of Students and Physicians. By James Tyson, M.D., Professor of Clinical Medicine in the University of Pennsylvania, etc. Philadelphia: P. Blakiston, Son & Co. 1891.

A Case of Fracture of the Twelfth Dorsal Vertebra, Followed by Injury to the Spinal and Sympathetic Nerve-Supply of the Bowel in the Region of the Ileo-Cecal Valve: Intestinal Hæmorrhage and Death on the Seventh Day. By J. T. Eskridge, M.D., of Denver, Col. Reprint. 1891.

Original Articles.

THE DISTRIBUTION OF DIPHTHERIA IN MASSACHUSETTS.[1]

BY SAMUEL W. ABBOTT, M.D.,
Secretary to the State Board of Health.

THE following paper is intended to present the principal facts which relate to the prevalence of diphtheria in Massachusetts, for the period of eighteen years from 1871 to 1888 inclusive, the chief point being its geographical distribution.

A brief general statement is presented as an introduction to the special topic.

The sources of information are, mainly, the annual registration reports, the voluntary returns of local health officers, and such personal inspections as have been made by the writer and others, under the direction of the State Board of Health.

I. GENERAL DESCRIPTION OF THE STATE.

Topographical and Climatic Features.

The State of Massachusetts is one of the older and smaller States of the North American Union. In area it has a surface of about 8,000 square miles (21,000 sq. kilo.) or about two-thirds the size of Belgium.

As compared with the other States of the Union it is one of the least in area. There are but four smaller States. Texas has an area about thirty-three times as large. It extends over an average breadth of one degree in latitude, and three or more in longitude, the extremes of latitude being 41° 15′ and 42° 53′ N., and those of longitude being 70° and 73° 31′ W.

The land of the south-east and the island portions is low and sandy, and rises gradually toward the western border, where the northerly portion of the Appalachian range of mountains traverses the State from north-east to south-west. The average elevation of the western county is not far from 1,000 feet, with occasional elevations of 2,000 and one of 3,500 feet.

The climate presents extremes which are trying to persons of delicate constitutions. Occasional temperatures of 20° below zero and 100° above are recorded. The mean average temperature at Boston is about 48°, and one or more degrees lower in the western counties. Sudden changes are common, and the passage from winter to summer is often rapid. The climate of the south-eastern portion and the two islands is much more equable than that of the interior. The ground often freezes to a depth of three feet or more in winter, and snow covers the ground to a depth of two feet or more, especially in the western counties. The average rainfall is from 42 to 44 inches.

The State has an irregular sea-coast line of about 250 miles.

II. POPULATION.

The State was settled in 1620 by the English, and for nearly two centuries the English constituted by far the predominant nationality represented. Since 1840 immigration from various other sources has been rapid.

Massachusetts has also contributed more than one and one-half millions of its population to the Western States.

No census was taken until 1765, in which year the State had 238,195 inhabitants. The following table presents the number of inhabitants at each succeeding census:—

TABLE I.

POPULATION OF MASSACHUSETTS.

Year.	*Population.*
1765	238,195
1790	378,787
1800	422,845
1810	472,040
1820	523,287
1830	610,408
1840	737,700
1850	994,514
1860	1,231,066
1870	1,457,351
1880	1,783,085
1890	2,238,943

By the State census of 1885 there was an excess of 76,373 females, so that the ratio of males to females was 100 to 109. The age periods 20–40 contributed more than one-half of this excess, a fact which is doubtless due to the emigration of the vigorous males of these ages to the Western States.

The population of the State at the census of 1880 consisted of 72.9 per cent. of persons of native birth, and 27.1 per cent. of foreign birth. Turning back to the previous generation, however, we find that of the parents 48.1 per cent. only were of native birth, and 51.9 per cent. were of foreign birth.

The accessions to the population by immigration during the past fifty years have been mainly from Ireland, the British North American Provinces, Scotland, Germany, France, Italy, and Sweden. For the past twenty years a large part of the accession from the British Provinces was of French Canadian origin.

The term *native* must be taken in a comparative sense, since the entire population is made up either of people of foreign origin, or their descendants of such class, to the number of nine or ten generations.

No allusion is here made to the aboriginal inhabitants, of whom there are less than 500 now living in the State, and of these but few are of unmixed Indian origin. They occupy two small sea-shore towns.

Density.

The State is more densely settled than any other State of the Union except Rhode Island. The average density of the population is 278.5 per square mile (by census of 1880). The population is very unevenly distributed, as is shown in Table V.

Massachusetts has followed the example of most civilized countries in the rapid increase of its urban as compared with its rural districts. Some of the cities and towns have doubled their population within a period of ten or fifteen years. On the other hand, in very many of the small towns, which occupy districts remote from railway travel, the population has for many years been stationary, and, in not a few, diminishing. Some towns have a smaller population than they had in 1790.

About thirty-eight per cent. of the population live within a radius of ten miles of Boston.

III. VITAL STATISTICS.

The marriage, birth, and death-rates of the State for the past forty years are shown in Table II.

The birth-rates and death-rates of the urban and the rural population for the census years are shown in Table III.

[1] Read at the Seventh Meeting of the International Congress of Hygiene and Demography, London, August, 1891.

In this paper it is to be understood that the data given includes *fatal croup*, since it is generally conceded by the physicians of Massachusetts that fatal croup, so far as the registration returns are concerned, cannot well be separated from diphtheria.

TABLE II.

Periods.		Marriage rates (persons married).	Birth-rates.	Death-rates.	Excess of births over deaths.
	1851-55 . . .	23.4	28.9	18.7	10.2
	1856-60 . . .	19.6	29.5	17.9	11.6
Civil War —	1861-65 . . .	18.7	25.3	20.7	4.6
	1866-70 . . .	21.0	26.1	18.2	7.9
	1871-75 . . .	19.8	27.6	20.8	6.8
Financial Depression	1876-80 . . .	16.0	24.7	19.2	5.5
	1881-85 . . .	18.5	25.1	19.8	5.3
	1886-90 . . .	18.6	25.9	19.4	6.5

TABLE III.

BIRTH-RATES PER 1,000.

Locality.	1865.	1870.	1875.	1880.	1885.
Cities	25.7	27.2	29.7	28.2	27.7
Remainder of the State. .	22.6	25.6	23.8	27.5	21.7

DEATH-RATES.

Locality.	1865.	1870.	1875.	1880.	1885.
Cities	22.1	21.6	23.9	22.1	21.2
Remainder of the State. .	19.8	16.6	18.7	18.6	17.6

TABLE IV.

MORTALITY FROM CERTAIN INFECTIOUS DISEASES, 1869-88, EXPRESSED AS AN ANNUAL RATIO PER 10,000 OF THE LIVING POPULATION.

Year.	Small-pox.	Measles.	Scarlet Fever.	Typhoid Fever.	Diphtheria and Croup.	Phthisis.	Cholera Morbus.
1869	0.4	1.6	9.9	8.5	5.4	32.8	13.1
1870	0.9	1.8	4.7	9.1	4.6	34.3	13.1
1871	1.9	.9	5.8	7.5	5.0	33.9	11.5
1872	6.7	2.8	8.9	11.1	4.9	36.2	21.2
1873	4.3	1.1	6.4	8.9	4.7	35.3	16.2
1874	.2	1.0	8.6	7.1	5.6	32.8	14.4
1875	.2	1.4	10.2	6.4	11.4	34.7	15.8
1876	.2	.3	7.4	5.3	19.9	32.2	12.6
1877	.15	.8	2.8	4.9	19.1	32.9	11.6
1878	.01	1.8	2.4	4.1	15.0	32.0	9.4
1879	.04	.1	4.9	3.7	13.4	30.4	7.9
1880	.2	1.3	3.2	4.9	13.5	30.8	11.3
1881	.2	1.3	2.2	5.9	12.6	32.4	10.2
1882	.2	.4	1.7	5.6	9.5	31.7	11.7
1883	.03	1.7	3.5	4.5	8.6	31.5	10.3
1884	.01	.4	3.3	4.5	8.5	30.3	10.9
1885	.1	1.6	3.0	3.9	7.8	30.7	9.5
1886	..	.6	1.7	4.1	7.9	29.5	9.8
1887	.01	2.3	2.9	4.5	8.1	28.5	10.6
1888	.04	1.1	2.5	4.6	9.0	27.1	10.7

Table IV shows the mortality-rates from the principal infectious diseases for the twenty years ending with 1888:

IV. THE COUNTIES.

We come now to the special topic which forms the title of this paper, the geographical distribution of diphtheria and croup in Massachusetts.

The term diphtheria does not appear in the registration reports of the State until 1858, a fact which has but little bearing upon the question of its prevalence at an earlier period.

From 1858 the annual number of deaths assigned to this cause rapidly increased until 1863, when 1,420 deaths were reported from this cause, and 1,231 in 1864. There was then a rapid decline till 1867, when there were but 251 deaths registered from this cause, and the annual number continued at quite a uniform rate of about 275 deaths for the next seven years, when it rose again to 2,610 in 1876 and 2,734 in 1877.

The diphtheria death-rate bears no relation to the general death-rate, except in the period 1862 to 1867; but in 1872, when the general mortality-rate was at its highest point and infectious diseases were generally very prevalent, the diphtheria death-rate was far below the mean, and in 1876 and 1877, when the general death-rate was quite near the mean, the diphtheria death-rate was at its highest point.

For the purposes of this paper the city and township will be considered chiefly as the unit of population for comparison, but, in the first place, the counties should be considered in a general way, although the county lines have but little sanitary significance.

The areas, the population, and density (census of 1890), and the diphtheria death-rates of the fourteen counties are presented in the following table:

TABLE V.

DEATH-RATES FROM DIPHTHERIA AND CROUP PER 10,000 OF THE POPULATION.

Counties.	Area in square miles.	Population, 1890.	No. to square mile.	Deaths, Diphtheria and Croup.	Total Population. *	Child'n under 5 years. *
Barnstable.	373	29,172	78.2	332	5.8	69.0
Berkshire .	959	81,108	84.6	1,450	11.7	108.7
Bristol . .	557	186,465	334.8	2,356	9.4	90.0
Dukes . .	124	4,369	35.2	10	1.3	20.0
Essex. . .	503	299,985	596.0	4,627	10.5	110.0
Franklin .	665	38,610	56.5	305	6.2	65.0
Hampden .	634	135,713	214.0	2,120	11.3	108.8
Hampshire.	572	51,859	90.6	617	7.3	79.0
Middlesex .	827	431,167	521.0	5,861	10.1	98.7
Nantucket.	65	3,268	50.3	110	16.4	253.6
Norfolk . .	494	118,950	240.8	1,485	8.5	86.0
Plymouth .	671	92,700	138.1	1,008	7.6	86.3
Suffolk . .	45	484,780	10,772.9	8,897	12.7	124.6
Worcester .	1,551	280,787	181.1	3,453	8.4	79.6
The State .	8,040	2,238,943	278.5	32,715	10.2	101.3

* Death-rates per 10,000.

Some general features of the counties may be outlined, beginning with the western border of the State.

Berkshire County consists mainly of high land, its

average level being nearly 1,000 feet above the sea. There are many mountains and hills of 1,500 to 3,500 feet, with deep valleys and swift watercourses. There is an abundance of forest land. There are a few thriving manufacturing towns. The manufacture of paper is largely carried on upon the pure, clear watercourses of this county. The population of the county slowly increases, but in many of the small towns remote from railway travel it has retrograded. The average density of the population is 85 per square mile.

The winters are long and severe, the snow often lying upon the ground in the forests, especially in the northern portion, until late in April.

The next three counties may be considered together. Franklin, Hampshire, and Hampden Counties lie upon the east and west sides of the Connecticut River, in the order named from north to south. The land in the two first named is generally higher than that in Hampden, the southern county of the group. The Connecticut River divides them all nearly in twain, while four tributaries drain the areas upon each side, entering the Connecticut at nearly opposite points upon each side of the river.

The population of Franklin and Hampshire Counties is chiefly agricultural, while that of Hampden has a much greater manufacturing population, distributed in several rapidly increasing cities and towns.

The density of population in these counties is as follows: Franklin, 56.5 per square mile; Hampshire, 90.6 per square mile; and Hampden, 214 per square mile.

Worcester is the central county of the State, and the largest in area. It is mainly occupied by an agricultural population. It has one large and one small city, and several enterprising manufacturing towns. The land is generally high in the northern portions and lower in the southern.

Suffolk is the metropolitan county, and includes the seaport and city of Boston. The county contains about half a million of inhabitants, which gives, with its limited area, a density of about 10,000 per square mile.

Middlesex and Norfolk join Suffolk upon the north and south, and are quite densely settled in the suburban portions. The former has a large manufacturing population in some of its towns, and has many towns of extremely rapid growth. Some of them have doubled within the past decade.

Essex, the north-eastern county, has a bold, rugged sea-coast, several manufacturing cities of moderate size and healthy growth, one or two large fishing ports. The land, especially near the coast, presents but few elevations. The Merrimack River passes through its northern portion to the sea.

Bristol and Plymouth occupy the south-eastern part of the State (exclusive of Cape Cod). They include four thriving manufacturing cities. The growth of Bristol is more rapid than that of Plymouth. The climate is generally milder than that of the counties already named.

Barnstable County is Cape Cod, a long, flat, sandy peninsula, stretching east and northward seventy miles or more. It has no cities or large towns, and its population is diminishing by emigration. The principal occupations are fishing and the culture of cranberries. The climate is insular. Many of the towns are becoming places of summer resort, on account of the equable temperature and facilities for sea-bathing.

The two island counties have similar characteristics to Barnstable. They are sandy islands.

The average density of population of these three counties is about 70 per square mile.

V. Classification by Cities and Towns.

The mortality-rates in the list of cities and towns have been compiled from the annual registration reports of the State for the period of 1871–1888.[2]

The number of municipalities having a city government at the beginning of this period was 14, and the number having such form of government at the close of the period was 28. Those having town governments at the beginning of the period were 322, and at the close 318.

A few changes have been made in the dividing lines of towns, for which due allowance has been made, where the changes included territory containing a considerable number of inhabitants, and a few new towns have been incorporated.

A table of mortality-rates from diphtheria is presented for the counties, but for the purposes of the present paper the town is taken as the unit of comparison.

Arbitrary methods must necessarily be taken for expressing the ratios of mortality, and in many instances, towns occupying an area of 50 or even 100 square miles of surface may have a rural population of one, two, or three thousand inhabitants, occupying but a small portion of this area. The population of 1880 is given as the basis of the ratio, since it is assumed as an average or mean for the period of eighteen years. The writer recognizes the fact that conclusions made from the statistics of small populations cannot be regarded as trustworthy, even for considerable periods of time. Hence the principal conclusions in this paper will be taken from large groupings, and not from the extremely small populations of the towns in rural districts.

There are some points which are worthy of notice in connection with the extremes at the top and bottom of the list.[2]

Of the fifteen towns which stand at the head of the list as having excessive mortality-rates from diphtheria and croup, in the period under consideration, five are small, or comparatively small, and contiguous towns in the north-west corner of the State.

These towns are mainly inhabited by a sparsely settled farming population, and their average level above the sea is much higher than that of the State in general. The lowest land in this district is at least 500 feet above the sea, and the average level of the district is not far from 1,200 feet above the sea-level. The district is very thickly wooded with forests of oak, pine, maple, and other woods, except in the valleys, which have a comparatively small area of cultivated meadows and low land. One small river flows through it in a general north-westerly direction, receiving many rapid mountain brooks as tributaries. There is one manufacturing town, a railroad centre, of 15,000 inhabitants.

Florida, which had the highest death-rate from these causes for the period, is a hilly town of small population (459 in 1880). The Fitchburg Railroad passes under the town, from its eastern to its western border,

[2] It is impracticable to publish the complete list of cities and towns included in this table, on account of its length. It will appear in full in the Transactions of the Congress. A table (Table IX) of extremes is given at the close of this paper.

a distance of five miles, by means of the Hoosac Tunnel. The second town upon the list in point of prevalence is Spencer, an interior town of Worcester County, situated mainly upon a high hill, and having a comparatively dense population (7,466 in 1880), engaged mostly in shoe manufacture.

The third town, Freetown, is a town of comparatively small population (1,329 in 1880), in Bristol County, adjoining the manufacturing city, Fall River. The land is low and sandy.

Adams, Williamstown, and Hancock are all in northwestern Berkshire, upon high land. Adams has a considerable manufacturing population upon the bank of the Hoosac River.

Webster is a manufacturing town in Worcester County, on comparatively low land. Ayer is a railroad centre in northern Middlesex. The land is quite level in the settled portion of the town.

Nantucket is both town and county; the population is a peculiar one, being the remnant of a once populous whaling and fishing port of nearly 10,000 inhabitants, now reduced to about 3,000 by emigration. Its birth-rate is very low, and its death-rate high, these exceptional conditions being produced by the emigration of the young and vigorous portion of the population, leaving the older portion, in whom the mortality-rate is high. The crowding together of the population into a densely compacted town upon a land-locked harbor undoubtedly contributes to the same result.

Turning now to the other extreme, four towns had no deaths from diphtheria during the period under consideration. All of these are small towns. Their chief characteristic is *inaccessibility*. Neither of them is upon or near a railway line, and public travel through them is very limited. Mt. Washington is cut off from the rest of the State and from the Housatonic Railway by a range of high hills. Chilmark is a remote town upon the island of Martha's Vineyard, at a distance from the points of summer resort.

Dividing the State by a more general classification into rural and manufacturing towns, there are 254 of the former class, and 92 of the latter. The general characteristics of these two classes are as follows:

Rural Towns. — These are mainly towns of small population, distributed over an average area of nearly thirty square miles for each township. The principal occupation of the population of these towns consists of dairy-farming, market-gardening, and other branches of agriculture.

The entire population of this class of towns in 1880 was 440,664, giving an average for each of the 254 towns of 4,735 inhabitants. Five only, out of this number, had more than 5,000 inhabitants in each by the census of 1880. A few of these towns are summer resorts, either upon the sea-coast or in the inland region. Some of the towns of this general class have increased slightly in population in the past twenty-five years, many have remained stationary, and a considerable number have slowly decreased. The younger and more vigorous producing part of the population has emigrated either to the cities or to the Western States.

(To be continued.)

THE Canadian government has warned steamship companies that it cannot undertake to provide for destitute immigrants at the public expense, and that the companies may be ordered to return them.

LAPAROTOMY, WITH REMOVAL OF CANCER OF THE OVARY.[1]

BY CHARLES P. STRONG, M.D.

THE specimen with which I accompany these notes, was removed to-day from a girl of twenty-one, whom I first saw in February, 1891. The history given at that time was that about the last of the preceding November, while dressing, she noticed a sensation of hardness on the right side of the abdomen, but without any pain or discomfort whatever; nor had the increase in her size, which to my eye was very marked, been observed by any member of her family. She had always led an active outdoor life, and was, so far as she knew, thoroughly healthy, with the exception of this hard lump. Menstruation was regular every four weeks, lasting five days, there being no change in that respect since November. The pain which she had when unwell never sent her to bed or interfered with whatever employment she might have at hand. She was entirely free from backache, abdominal pain or discomfort. Bladder and rectal symptoms were also wanting.

The abdomen presented an irregular, lobulated enlargement, from the navel to the public bone. Abdominal palpation, with the patient under ether, showed two large lobes, the right much the larger, and several small and more or less movable lobules, above and to the left of these two larger lobes. These lobules were about the size of a kidney. The whole size of the tumor, as apparent under the examination, was about that of an adult head. On vaginal examination, a multi-lobular tumor, with close connection to the uterus, but movable in a limited degree, could be felt filling up Douglas's fossa and encroaching upon the vagina from all sides, extending deep in the abdomen, and also high above the navel. The uterus was crowded down nearly to the vulva and to the right. It was not movable as a distinct organ from the tumor. The mass seemed to spring, without a pedicle from the uterus on the left side, at or near the junction of the cervix and body. The cavity of the uterus measured three and one-half inches. The growth pressed slightly upon the rectum.

Taking into consideration the girl's age, there was a certain element of doubt thrown upon the diagnosis, which otherwise would have been almost unhesitatingly pronounced multiple uterine fibroids, and which I subsequently learned had been so considered by every physician under whose hands she had previously come. Being quite confident that this was the condition, and, having in view the freedom from any symptoms, I felt that temporizing measures would be the best here, rather than the removal either of the tubes and ovaries or of the growth itself, which seemed to present all the difficulties that would render the operation one of danger. In this conclusion I had the concurrence of the patient and her family, and prescribed ergot. There were no untoward symptoms until the latter part of March. One menstrual period had been passed with absolutely no pain and with normal flow. With the second period there was some pain, and the patient localized a good deal of discomfort, at times absolute suffering, upon the left side, about midway between the navel and the anterior superior spine of the ilium. I could not discover any change in the size or relations of the growth to account for this, and attributed it

[1] Read at the meeting of the Obstetrical Society of Boston, May 9, 1891.

rather to over-exertion at the time she was unwell, which had possibly caused a slight peritonitis, as her temperature was a little elevated. Contrary to my expectations, this pain did not improve with rapidity. There were remissions of it, but the returns were more severe. The patient eventually began to lose flesh rapidly, and, at the same time, appetite and courage. I had her go to her home in the country, but the change did not prove beneficial, and was really disadvantageous, because it removed her from my immediate care, so that a longer time than I should have otherwise have allowed to elapse passed by before I saw the patient again, which was in the latter part of April. She was then having a temperature of 100° to 101°, had become strikingly emaciated, the growth had increased very materially, and in parts felt elastic, as though fluids were present.

On May 9th I operated. The incision went through a very much thickened peritoneum; and came upon a large, irregular, semi-solid tumor, which was aspirated with no result. The tumor extended down behind the uterus, filling both sides of the pelvis, up to the liver on the right side and the stomach on the left, and pressed up the diaphragm, causing compression of the lungs. The incision was extended one and one-half inches above the umbilicus, and the tumor rapidly dissected out. Several large adhesions to the intestines, omentum and abdominal walls were clamped and tied. The pedicle, which was found on the left and included all the vessels of the broad ligament, was as thick as the wrist. It was tied with a shoemaker's stitch, cauterized and dropped back. The pedicle, upon its cut surfaces, was very fibrous, and as much as possible of this tissue was cut away. There was some hæmorrhage complicating the operation, from the adhesions, and from the vessels of the broad ligament retracting. The ovary of the right side contained one retention cyst, which was not disturbed. The weight of the tumor, twelve hours after removal, was fifteen and one-half pounds.

The report of Dr. Whitney, to whom the specimen was submitted, was that the tumor was cancer of the ovary, and that the pedicle showed no evidence of disease.

The condition of the patient was extremely bad after the operation for some hours. Then she rallied, and made a convalescence which was interrupted only once by a slight attack of peritonitis, induced by morphia being given, contrary to orders.

The interest of this case lies in the possibility of having made a differential diagnosis ten weeks earlier than I did, that is before I operated. The sensation imparted by the tumor to the examining hands, both abdominally and vaginally, was that of a firm, fibrous, elastic mass. The girl's age was against it being a fibroid. The youngest I have seen before of pure fibroid tumor has been twenty-three years. But the freedom from pain; the comparatively slow growth of upon her own part or her mother's, that there was the tumor which did not arouse suspicion before, either any abnormal enlargement; the increased depth of the uterus; the inability to differentiate the uterus from the tumor as having a separate degree of mobility, — all pointed, to my mind, very conclusively to the existence of fibroids only. The question of making an exploratory incision I did not feel to be worthy of consideration, because if it were a fibroid and were giving no trouble, and were of this excessively slow growth, it was, to my mind, far better to leave matters as they were. On the other hand, were it a tumor of unknown origin, an exploratory incision would, of necessity, have been followed by this operation; and, while it would have been proper, yet it would have been one for which neither the patient nor her family were at that time prepared. The occurrence of cancer of the ovary, and especially of cancer of the ovary at this early age, and a cancer of this variety, is rare. I have been able to find but very few recorded cases in which the diagnosis has been substantiated by microscopical examination. The growth was of such a marked degree of malignancy that, of course, its return is to be greatly feared. The point of interest is that the pedicle, although thick and large, was absolutely free from disease, showing that that was all removed, so that the one point of infection possible is along the adhesions to the other pelvic organs. One cyst was torn slightly and a very small portion of its contents escaped into the abdominal cavity. This was immediately thoroughly washed out, so that I feel that the chance of infection in this way was entirely removed.

Note. — June 22d. The patient has steadily improved, and, upon vaginal examination to-day (six weeks after the operation), no evidence of thickening could be discovered upon either side of the pelvis. There is no pain, and she is enjoying her usual routine of life.

September 1, 1891. The patient has gained nineteen pounds in weight during the past month, and is perfectly well.

THE APOSTOLI METHOD OF TREATMENT: ITS TECHNIQUE.[1]

BY WALTER L. BURRAGE, M.D.

Although the Apostoli method of treatment, as ordinarily spoken of, refers to the treatment of fibroid tumors of the uterus with electricity, strictly speaking it should have reference to the treatment of uterine disease with electricity by the most recent and approved methods. For to Apostoli in chief are due the accurate measurement of electrical doses; the application of the electricity most nearly at the seat of disease; the possibility of the use of high intensities by means of the abdominal clay plate at the inactive pole; and, above all, the elimination of danger by the employment of strict antiseptic precautions. He has elaborated the details of the treatment, and has carried it out with painstaking attention and an enthusiasm that has gained for him and his methods a wide notoriety and a host of eager fellow-investigators the world over.

It is my purpose in this paper to treat in a practical way the methods of applying galvanic and faradic electricity in uterine disease.

At some future time I hope to report results with this treatment, to add my testimony to its merits as a therapeutic agent. It has been a good deal slighted in the past, principally from faulty methods and a lack of knowledge of electricity on the part of those who applied it, and is only now taking the place it deserves as a routine means of treatment in gynecology.

Before speaking of the necessary apparatus, I should like to say a word or two about electricity itself, for it is very essential to have a proper understanding of your medicine and its dosage before prescribing.

I must take it for granted that the theory of the

[1] Read by invitation before the Obstetrical Society of Boston, May 9, 1891.

voltaic cell is known to you all. The cell consists of a plate of zinc and a plate of carbon in a jar of acidulated water, and separated one from the other by some non-conducting material. The zinc plate is the positive element, the carbon the negative. Positive electricity flows down the positive element, which is the same thing as negative electricity flowing up it, whence it happens that the negative pole of the battery is at the zinc plate. So the carbon is the negative element and the source of the positive pole. The electricity passes through the water from the positive to the negative element, decomposing it into its constituents, hydrogen and oxygen. The hydrogen gathers in bubbles on the negative element, and the oxygen on the positive element.

Suppose the current starts from the positive element. In flowing through the water to the negative element it meets a certain amount of resistance, and this is the internal resistance of the cell; then passing up the negative element it emerges from the cell as positive electricity, and in its course back to the cell — back to the negative pole — it encounters further resistance in the conducting media. If a copper wire, the resistance — called now the external resistance — is very slight because copper is a good conductor; if, on the other hand, it is a portion of the human body the resistance may be considerable.

The elements of a number of cells may be coupled, so that the electricity obtained from the battery will be a current of quantity or a current of tension. By coupling all the zincs together and all the carbons together we get a current of quantity. But if the elements are coupled in pairs, a zinc with a carbon and so on, we get a current of tension. What we want in gynecological electricity is a current of high tension and of moderate quantity.

Now there are certain electrical terms that is necessary to understand in order to get a definite idea of the subject. These are the ohm, the volt and the ampère.

The *ohm* is the unit of measure of resistance; it is the amount of resistance that would be offered to the passage of a current of electricity by a column of mercury one square millimetre in diameter, and one metre and a fraction long, at 16° Centigrade.

The *volt* is the unit of measure of electro-motive force — of the pushing power of the electricity; it corresponds to "pounds-pressure" in speaking of a steam-boiler. The electro-motive force may be likened to the pressure in a pipe emptying a cistern of water. The pressure would be the same, no matter what the size of the cistern, provided that the water was maintained at the same height and the pipe of a constant diameter. The volt is the amount of electro-motive force necessary to drive a current through an ohm of resistance.

The *ampère* is the unit of measure of current. It is the amount of current that results from a volt of electro-motive force passing through an ohm of resistance. In medicine we use the thousandth of an ampère, the milliampère, as a unit, our currents being comparatively weak.

There is a simple rule by which we can determine the current strength, knowing the electro-motive force and the internal and external resistance of the battery; it is that the electro-motive force divided by the sum of the internal and the external resistance is equal to the current, and it is called Ohm's Law. In the human body the resistance is very high, the skin offering the greatest opposition to the passage of the current; a dry skin is more resistant than a wet one. In passing a current through a fibroid tumor from the interior of the uterus to the surface of the abdomen there may be all the way from 100 to 200 ohms of resistance. The current pursues the path of the least resistance; generally that is the most direct path also, but not necessarily, as may be the case with a fibroid of great density and high resistance. A current from a vaginal electrode placed near it may pass to one side and not enter the tumor at all; hence the advantage of intra-uterine treatment and treatment by puncture.

There is an active and an inactive pole in gynecological electricity. The active pole is applied in the vagina or uterus, the inactive to the surface of the body. We expect no effect from the inactive pole beyond a mild counter-irritation; it simply serves to close the circuit. We may make either the positive or the negative pole the active one, as we choose.

As to the therapeutic action of the two poles: at the negative, hydrogen gas and alkalies are attracted from the tissues; at the positive, oxygen gas and acids gather. The negative is the liquefying, and the positive the coagulating pole. Besides the action at the poles there is the interpolar action, the action on all the tissues through which the current passes, most marked near the active pole.

According to Apostoli, the negative pole in its interpolar action is stimulating and congestive and favors absorption by increasing the blood-supply; in its polar action it is markedly electrolytic, producing chemical decomposition and cauterizing with lower intensities than the other pole.

The positive pole in its interpolar action is sedative, anticongestive, hæmostatic. It is used to allay inflammation and drive out pain. In its polar or local action it is styptic with moderate intensities, and caustic and hæmostatic with high intensities. It is used to check hæmorrhage when applied to the interior of the uterus. Apostoli and Laquerrière have determined that the positive pole has a marked germicidal action, much more so than the negative. Its polar action is the important one; the interpolar action secondary.

Apostoli does not apply the active pole in the vagina any longer, considering the intra-uterine method superior. It seems to me that, in certain cases, as, for instance, when we wish to place the active pole as near as possible to a mass of exudation, that the vaginal method is preferable. By using a clay-covered vaginal electrode, high intensities (100° or over) may be employed without danger to the vagina. With the old-fashioned brass ball covered with chamois skin or absorbent cotton, it was possible to make a deep ulcer with a current of 30° When using the positive pole in the vagina, it is well to dip the electrode in a solution of bicarbonate of soda before using, to neutralize the acids that are attracted to this pole.

Galvanism. — For apparatus, it is better to have a battery of from thirty to fifty cells. I consider a battery of forty Leclanché or Law cells as the best. Each cell should have a capacity of about a quart. Such a battery gives an even and reliable current, and is the least trouble to take care of. For portable batteries, that made by Gaiffe, of Paris, with zinc and carbon elements in a solution of bisulphate of mercury, and having a convenient collector, seems to me the best. Waite & Bartlett, of New York, make a good plug and socket battery.

As a current measure it is important to have a trustworthy instrument. Who would think of giving a powerful drug without carefully measuring the dose? It will be apparent, by bearing in mind Ohm's Law, that the number of cells of a battery used in a treatment is no accurate measure of the current, for the resistance is never twice alike. What we do with the milliampère meter is to measure the actual current that is passing in the circuit in which the body or a part of the body is included.

The meters made by Gaiffe, Engelman, McIntosh, and Waite & Bartlett are all to be relied on. The instrument should be calibrated to measure up to 250° or 300°. To regulate the current either a collector, a current controller, or a water rheostat may be used. Waite & Bartlett make a good collector, and the water rheostats of Keith or Bailey are simple and cheap. I have had no experience with current controllers. There is one made by Fleming, of Philadelphia, that is well recommended.

Electrodes. — For the inert pole the clay plate of Apostoli is best. This should be large where high intensities are to be used, eight inches by ten inches is a convenient size. I prefer the modification of Dr. Goelet, of New York, who has placed the clay in a rubber covering, making it much easier to handle.

For internal electrodes the most useful of all is the non-corrodible platinum. Just now platinum is about as costly as gold, and difficult to procure at that. A convenient substitute is iron treated by hydrogen by a special process. The tips of this electrode may be renewed often if they become corroded by the positive pole; they cost a matter of twenty-five cents each. A two and one-half inch tip is most generally useful. Tips are also made from block tin. They are cheap, flexible, and stand the positive pole well. For the negative pole alone a tip of copper, nickel-plated, is very serviceable. A vaginal electrode should form part of an electrical outfit. That devised by Goelet is the best. It consists of a ball of carbon covered with clay and absorbent cotton.

For galvano puncture of fibroids and pelvic exudation the best electrode is that made for Apostoli by Gaiffe. It consists of a long steel needle, a millimetre and a half in diameter, and tipped by a sharp gold point one millimetre in diameter and half a centimetre in length, this point being insulated from the main shaft of the needle by a hard-rubber collar one centimetre long and of the same diameter as the point. The insulation insures to the vagina and peritoneum at the point of puncture immunity from caustic action. The needle is held in a universal handle — the shaft being insulated from the vagina by a sheath of hard rubber. This needle, I have found, causes less pain than does a needle not provided with insulation at the place where it passes through the vaginal and peritoneal coats.

Faradism. — The faradic or induced current differs much from the galvanic, though it has many similar effects. When an insulated copper wire, its ends connected with the poles of one or two voltaic cells, is wound round a bunch of soft-iron wires, forming the primary coil, the current passing through the wire will render the soft iron a magnet. Now, if another coil of copper wire is slipped over the first coil, it will be found that at the time of making the circuit, a current is flowing in the wire of the second coil in an opposite direction to that in the first. This current lasts but an instant. At the moment of breaking the circuit another current is induced.

Taking advantage of these facts, it is customary to interrupt the current more or less rapidly by means of the rheotome, or vibrator, a simple mechanical device depending for its action on the magnetizing and demagnetizing of the soft iron. When the secondary coil is made of large coarse wire and comparatively short, we get a current useful in contracting a uterus or where stimulation is needed. When the secondary coil is made of fine wire and very long, — Engelman uses a coil made of 600 metres of wire, — we get a current very useful in relieving pain. The choice of poles of the faradic battery is of little consequence — no especial difference in their action has been determined.

The secondary current cannot be measured like the primary, and the only means we have of determining whether at one time we are giving the electricity stronger or weaker than at another is by noting how much we move the secondary over or off the primary coil.

For the application of faradism it is necessary to have a battery constructed on the Dubois-Reymond plan, that is, with a stationary primary coil over which the secondary coil is slipped to increase the current. It is best to have two or three coils. If two, one should be wound with a long and fine wire, the other with a short and coarse wire. The Engelman battery has three coils, the third being of medium-sized wire, and of medium length. I use a battery made for me by Waite & Bartlett, and having two coils.

For electrodes, two are necessary, both bipolar, that is, with both poles on one staff and insulated one from the other; one electrode is large for the vagina, the other smaller for intra-uterine applications. The advantages of the bipolar method of applying faradism are to my mind considerable. The entire current is concentrated where you wish to use it, and it is less trouble to administer.

The approximate cost of an electrical outfit is from $75 to $100, though it is possible to spend twice or three times this sum.

Operative Detail. — The important points are, strict attention to asepsis, a careful choice of the active pole, and graduating the dose according to the susceptibility of the patient.

Let us follow the steps of the treatment in a case of fibroid treated in the office. The patient is placed on the table on her back, with her hips at the edge. The vulva and vagina are thoroughly irrigated with a solution of corrosive (1–5000) from a douche pail hanging conveniently near. The water from the vagina is caught in a basin or small bed-pan or allowed to run down over a Kelley apron to a pail on the floor. When for any reason it is inconvenient to give the douche, I am in the habit of swabbing the vagina and vulva freely several times with large pieces of absorbent cotton soaked in corrosive and held firmly in a pair of Bozeman's forceps. The perineum is hooked back with the left forefinger while the cotton is carried over the entire surface of the vagina. Next, the clay plate is placed on the abdomen by the nurse, it having been previously warmed over the register or treated with hot water in a shallow pan. A photographer's developing-pan is useful for this purpose, and serves to hold the plate when not in use.

The operator now tests his battery. If it is one where cell after cell is taken into the circuit sepa-

rately, either by means of a collector or by the plug and socket arrangement, it is better to test each cell. To do this, put a feeble resistance in the circuit from zero to cell No. 1, and note the deflection of the galvanometer needle. Repeat the operation with cells 1 and 2, and so on through the series. When the entire series of cells is used at once it is sufficient, as far as safety against shock goes, to make a high resistance in the rheostat, and note whether the needle is deflected when the circuit is closed. It is to be said that it makes no difference whether the rheostat and galvanometer are connected with the negative or the positive pole, so long as they are in the circuit; the former is used to graduate the current and the latter to register its strength. It is especially important that the ends of all the conducting wires should be free from grease or other non-conducting material, and that they should fit tightly into their sockets so that the circuit may not be broken during the treatment.

After washing his hands the operator is ready to introduce the internal electrode. This may be done with the patient on the back, either by touch or with a Goelet depressor speculum by sight; or with the patient on the side and the Sims speculum. In the majority of cases I prefer to pass the electrode by touch.

Cleansing the Electrode. — Wash it after each application. Just before using, plunge it in boiling water, to which a little washing soda has been added, for a few minutes. For this purpose an ordinary quart tin can over a kerosene stove answers very well. Then it is cooled off in a corrosive solution (1–2000), and introduced. Great care should be exercised not to hurry or to do any violence to the uterus while passing the electrode.

The same antiseptic precautions are to be observed with the needle and its sheath used in puncture. In cases of hæmorrhage from the uterus an electrode of gas carbon is often used to advantage, because this substance may be made into tips of various sizes to fit different uterine canals, and it is not affected by the positive pole. On account of the porous nature of the carbon, it is well to dip it in iodoform and ether before its introduction.

In cases where there is severe flowing it is important to make the application to as much of the internal surface of the uterus as possible. For this purpose the handle of the carbon electrode is provided with notches an inch apart, the length of the carbon tip. The operator makes an application of five minutes with the tip at the fundus, then withdraws the electrode till his finger at the cervix feels the next notch, and repeats the application, and so on until the whole length has been treated.

Next make the connections between the clay plate, galvanometer, battery and internal electrode, and turn on the current gradually. At the end of the treatment decrease the current in the same way, taking a minute of the five minutes of treatment for increasing and decreasing. With high intensities, when possible, I like to have the active pole entirely in the cavity of the uterus, and thus avoid cauterizing the cervical canal, because of danger of subsequent stenosis, and also from the fact that the cervix is so much more sensitive to electricity than the fundus. The electrode should be held steadily in the same place during the entire treatment except in cases where it is desirable to cauterize the entire cavity, as for hæmorrhage, just alluded to.

The operator should watch the galvanometer and the face of his patient closely while the current is passing. Oscillation of the needle means changes in the resistance, or breaks in the circuit. The treatment should not cause much pain.

After the clay has been removed and the abdomen rubbed dry, the patient is directed to lie down for from half an hour to two hours, more or less, depending on the amount of reaction. In out-patient work this rule is often difficult if not impossible to carry out, yet in my experience no harm has come from disregarding it. At the first treatment it is well to insist on its observance.

The galvano puncture is made as follows: the patient is directed to take a corrosive douche (1–5000) twice a day for a day before the treatment. She is given the preliminary douche as in other cases. Select a point in the cul-de-sac where there is no arterial pulsation to be felt, taking care not to puncture in the neighborhood of the rectum. It is not well to puncture anteriorily, because of danger of wounding the bladder. The needle is fixed in its handle so that half an inch projects beyond the sheath. The sheath is then drawn forward so as to protect the point, and is passed along the left forefinger to the spot selected. Make the puncture quickly. The current should be turned on very slowly, and the treatment should last from five to seven minutes. If there is much pain the patient may hold a handkerchief with ether to her face. If there is oozing afterwards apply Churchill's iodine to the spot. Place a piece of iodoform gauze, with a thread attached, in the vagina, having first swabbed out with corrosive. The gauze should be removed by the patient at the end of forty-eight hours, and a corrosive douche taken.

I have repeatedly made the puncture in my office and at the clinic, and sent the patient home after a rest of an hour or two, without bad results. This plan will answer in selected cases. Where possible, I should advise rest in bed for twenty-four hours. Another puncture should not be made sooner than a week or ten days.

As to the dosage of electricity, it is important to remember that different patients tolerate the current in a very different manner. A stolid, phlegmatic Russian Jew, with a large tumor, will bear a current of 150° or over without flinching, whereas a neurotic, hysterical lady, with a small tumor, may have considerable pain with a current of 40°. From what I have seen of Dr. Apostoli's work, and his writings bear me out in the statement, he applies very high intensities only in cases of large tumors, and intensities of over 200° rather exceptionally. A majority of cases — cases of subinvolution, endometritis, small tumors and pelvic exudations — are treated with a current of from 60° to 100°, depending on the individual patient.

It is not sufficient to introduce an electrode and turn on a current hap-hazard, any more than it would be considered good treatment to give all patients suffering with secondary syphilis a uniform dose of mercury. You have to be guided by the tolerance in the individual patient.

So with regard to the frequency of the applications, there is no cast-iron rule to follow. Some patients can be treated twice or three times a week to advantage; others, only once a week; and still others not as often.

The operative technique is not especially tedious.

Using high intensities — by that I mean currents of over 50° — the treatments average five minutes each actual time of current passing. At my clinic at the Free Hospital for Women, I treat about five patients an hour.

The requisites for successful electrical treatment are, besides a working knowledge of gynecology, suitable apparatus and an acquaintance with electricity.

Medical Progress.

RECENT PROGRESS IN THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

ON THE PREPARATION AND USE OF OINTMENTS IN DISEASES OF THE SKIN.[1]

Dr. L. Duncan Bulkley has published a practical and suggestive article on the above subject, and gives many hints of value to practitioners. The application of ointments constitutes such a large element in the treatment of diseases of the skin, by the profession at large, that it seems desirable to present a few words of caution concerning their preparation and employment, for want of success often results from the improper compounding or application of one or another of this class of remedies.

It is better not to trust to any artificial means for preserving the freshness of ointments, but to secure sweet and good material and always to reject that which is at all old, or ointments which have been long prepared. It is important to avoid the slightest rancidity in ointments, and it is better to order ointments to be freshly compounded of the strength desired, rather than to take those officinally prepared and kept in stock.

Among cerates, which are in some respects more valuable for ointments for most skin affections than lard, we have two: *ceratum simplex*, consisting of white wax 30 parts, lard 70 parts; *ceratum cetacei*, which is composed of spermaceti 10 parts, white wax 35 parts, and olive oil 55 parts. To these should be added *unguentum cetacei*, which is very like the latter, only somewhat softer. These all have considerable body, and when spread on the skin form a protective coating, more suitable for many conditions than lard alone; but the first mentioned or simple cerate is far too hard for easy application in most diseases of the skin. The *glyceritum amyli*, composed of starch 10 parts and glycerine 90 parts, is a good basis for ointments when fatty substances are not well borne, or when it is desirable to remove the application frequently with water. Combined with oil of cade 25 parts, sapo viridis 15 parts, and glycerite of starch 60 parts, it makes a most valuable application in psoriasis, which can be well rubbed in at night and washed off completely in the morning.

The *oleum theobromæ* is ordinarily but little used in compounding ointments. It is particularly useful when added, in about a quarter part, to ointments for use on the hairy scalp to give them a low melting-point and to aid in forming a protective coating over the skin. When employed in too large proportion it will prove irritating to many skins.

Under the head of "ointments" we find but two preparations in the pharmacopœia: the *unguentum simplex*, composed of lard 80 parts and yellow wax 20 parts, and *unguentum aquæ rosæ*, of expressed almond oil 50 parts, spermaceti 10, white wax 10, rose-water 30 parts. The unguentum simplex is a good combination — much better for general use than simple lard; but, on the other hand, it is often found to be too hard, and ointments made with it will often be difficult of application, and when made up for some time with other ingredients, it will become too stiff for ready use; as ordinarily kept in drug stores it has not infrequently been found quite rancid.

The best ointment of all, when fresh and properly made, is the *unguentum aquæ rosæ*, the cold-cream of the pharmacopœia. But some judgment and skill is necessary in its preparation, for unless very perfectly compounded, with prolonged rubbing together of the ingredients, the ointment will not be perfect; in summer, also, it will require rather a larger proportion of the spermaceti and white wax in order to have the proper consistency for a perfect application. Very frequently, when the skin tends to be too dry, a portion of the water may be replaced with glycerine. Occasionally the odor of rose-water is not agreeable to the patient, and simple distilled water may be used in its place. The water held in this ointment is undoubtedly an important element in its remarkable effects upon the skin, for the *ceratum cetacei* and *unguentum cetacei* have quite a similar composition, but are by no means agreeable to most skins.

When the various products of petroleum known in the pharmacopœia by the general name of *petrolatum*, were introduced, it was thought they would furnish the best possible bases for ointments, and that they would rapidly supersede all other excipients; in Dr. Bulkley's opinion they will never supplant those already mentioned and others of recognized value. They are by no means always agreeable and non-irritating to the skin; indeed, many individuals are found who cannot bear them on the skin at all. Most of them have not body enough to form good ointments, although for simple inunction, as a lubricant, or for the application of carbolic acid to the skin as an antipruritic, vaseline serves the purpose very well.

Recently when lanoline and subsequently agnine were presented to the profession, it was expected that this substance would replace others as an excipient for ointments, But again we have been disappointed, and lanoline forms but a very small portion of a base of ointments used by those especially occupied with diseases of the skin. It is too sticky and not easy of application, and, moreover, it will often prove irritating to a delicate skin. While it was thought to afford a means for the more ready absorption of medicaments, more experience has shown this to be questionable. Indeed, in some experiments by Brooke, it was shown that the substances incorporated with lanoline were the slowest in entering the system. Lanoline is, however, useful as an addition to certain ointments, in the proportion of about twenty per cent., to give an adhesive quality to them, thus securing a firmer and more adherent coating for affected parts.

Of some forty officinal ointments, very few can be prescribed, as they are, in diseases of the skin. Thus the carbolic ointment is made of a strength of ten per cent., which is far too strong for most skins, whereas the tannin ointment of the same strength is too weak to be of real service. Belladonna ointment is also of

[1] Therapeutic Gazette, August 15, 1891.

the same strength, and is capable, if used at all freely, of producing serious constitutional effects. Also, the officinal ointment of chrysarobin should be diluted for most skins. Eight ointments are officinal containing preparations of mercury. Of these, the blue ointment, containing fifty per cent. of metallic mercury, is well known and of great value; but for inunction on most skins it requires dilution by one-half, in order not to excite too much irritation. White precipitate ointment has commonly to be diluted two or three times, even in psoriasis and seborrhœic eczema. The red iodide ointment is of fair strength, but to be effective in lupus, or where its corrosive power is required, it should be employed much stronger. Citrine ointment, one of the best known of the mercurial applications, is far too strong to be freely used. When diluted two to four times, it often serves a good purpose in reducing infiltrations in the skin. The yellow and the red oxide of mercury require to be very greatly diluted for use about the eyes. The single ointment of iodine is a good preparation, containing a trifle of iodide of potassium. A prescription which is of great service in reducing glandular enlargements in syphilis, is a mixture of iodine ointment with the ordinary mercurial ointment in equal parts. When well rubbed together, an ointment of the green iodide of mercury is made, which acts much more quickly than either of the ointments alone. For delicate skins it may require some dilution, but generally it is well borne. It is useful as a parasiticide in ring-worm and favus of the scalp.

The *unguentum picis liquidæ* is an excellent remedy, composed of equal parts of tar and suet; but it is far too strong for general use undiluted. When combined with oxide of zinc and rose ointment it forms one of the most perfect applications known for a large share of cases of subacute eczema, both in children and in adults:

℞	Ung. picis	ʒ ij.
	Ung. zinci oxidi	ʒ ss.
	Ung. aquæ rosæ	ʒ iv. M.

The ointments of the carbonate lead and iodide of lead, each ten per cent., are also good combinations. The latter is certainly an excellent means for causing absorption of enlarged strumous glands. The stramonium ointment, containing ten per cent. of the extract of stramonium, is likewise a good application, and forms a most valuable base for combination with acetate of lead and opium in the treatment of hæmorrhoids. There are four ointments containing sulphur, only one of which, the *unguentum sulphuris*, containing thirty per cent. of sublimed sulphur, is well known or much used. This is also too strong for direct application to most skins; diluted two or three times with a little storax, and perhaps a little tar ointment, it forms an excellent treatment for scabies, but the more agreeable applications of naphthol and resorcin have largely taken its place in dermatological practice. The oxide of zinc ointment of our pharmacopœia is a fairly good preparation. It is made of benzoinated lard, which is not agreeable to all skins; it is sometimes rancid and therefore irritating, where a freshly prepared zinc ointment and cold cream is grateful and healing.

Diachylon ointment, when freshly and properly made, is one of the most valuable means of local therapy known for many diseases of the skin. The preparation made according to the original preparation of Hebra, and given in the German Pharmacopœia, is a soft, buttery ointment, easily spread, and of a delightfully soothing character to most skins, and is decidedly superior to the ointment made according to the United States Pharmacopœia.

A few words may now be added in regard to the actual preparation or compounding of ointments, a feature which continually requires the attention of the physician, if he would have success in the treatment of skin diseases. It is desirable for the physician to frequently inspect the ointments or other preparations which are being employed, and to test them by smelling, feeling, rubbing on the skin, etc.

More harm is commonly done by too strong ointments than is usually supposed. The skin is a sensitive and irritable organ, and more often wants to be treated considerately and soothed into good action, than it does to be stimulated and irritated. It is well to begin with a mild preparation, increasing the strength as the circumstances seem to demand. It is also well to remember that the average patient, who has not heretofore been instructed, or who has not had special experience, knows nothing in regard to the best mode of the application of an ointment, and if the highest degree of success is to attend the use of any particular remedy, it must be only by its proper employment. Careful directions should, therefore, always be given to patients exactly how to apply ointments. Where it is desired to keep a part continually under the effect of an ointment, it should be soaked in it, if it were possible, as completely as though the part were immersed in a very large mass of the same; but as this is not possible, we have recourse to lint, and the ointment, which should always have considerable body, is spread in a very thick layer on the woolly side of the lint, and then firmly bound on the part.

An excellent illustration of the necessity for minute directions in regard to all these data, is found in connection with eczema of the scrotum. When treated carelessly, or when the patient merely smears on an ointment, the disease will prove most distressing and rebellious; but when, on the other hand, very minute directions are given in regard to the sudden and brief application of hot water once daily, at bedtime, and when the part is quickly dried and enclosed with a piece of lint spread with the tar and zinc ointment previously alluded to, and covered by a suspensory bandage, the patient has complete relief, and with proper accompanying treatment can surely be cured, and that with reasonable speed.

The demand in dermatology is not so much for new drugs, applications, or methods of treatment, as it is for the diffused knowledge of what is already known to be of service, and the faithful carrying out of methods which experience and observation have proved to be useful.

ANTISEPTIC TREATMENT OF TYPHOID FEVER.[2]

In a lecture on this subject at King's College Hospital, Dr. Yeo has called attention to the progress that the idea of an antiseptic treatment of typhoid fever is making amongst physicians in all parts of the world. He is unwilling, in the present stage of our knowledge, to put too much stress upon any particular manner of carrying out this idea, as we have probably not yet arrived at the very best means for doing so. What he says about the idea of the application of anti-

[2] Lancet, No. 3529, 1891.

sepsis in typhoid fever by various practitioners, is of interest.

Professor Petresco, of Bucharest, has borne valuable testimony to the efficacy of naphthol; he had previously experimented with carbolic acid, salicylic acid, turpentine, benzoic acid, kairin, calomel, corrosive sublimate, and boric acid, without any very favorable results. He then tried a saturated solution of sulphide of carbon, with which he was much better pleased, and lastly he tried naphthol, fifteen grains three times a day, and had results more favorable than with any other remedy; the rate of mortality was reduced, and the course of the disease favorably modified. Many physicians have recorded their approval of an initial laxative, and no doubt it is well, if there be no diarrhœa, to begin with one; there is then less hesitation in keeping the bowels quiet afterward. Indeed, it has been said that "purgation and antisepsis are, to some extent, interchangeable terms."

An aperient expels the poisonous ptomaines and other decomposing substances from the intestinal canal, and, if given in the early stages, may actually prevent subsequent serious diarrhœa. But the use of aperients, to be perfectly safe, must be limited to the first ten or twelve days of the fever, the great risk attending their use in the later stages is the possibility of deep ulceration in the ileum, and in that case an aperient may mean the difference between life and death to the patient. At that period of the disease intestinal antisepsis can only be safely secured by the use of intestinal antiseptics.

HYDROCHLORATE OF PHENOCOLL, A NEW ANTIPYRETIC AND ANTIRHEUMATIC.[3]

This substance appears in the form of a white powder, soluble in water. It is a compound of phenetedine, and seems to be similar in action to antipyrin. Fifteen grains of phenocoll reduces the temperature about as much as would be accomplished by twenty-two to thirty grains of antipyrin or about fifteen of phenacetin. It has analgesic properties in doses of seven to fifteen grains.

PIPERAZIN.[4]

This substance has the property of dissolving a large proportion of uric acid. One part of the urate of this substance is soluble in about fifty parts of water. Urate of lithia requires 368 parts of water to dissolve it; the piperazin salt is, therefore, seven times more soluble than the lithia salt. Piperazin is not toxic, and appears to have advantages over other substances which may be used to act as solvents for uric acid. It seems to be worthy of trial in suitable cases.

METHODS FOR THE ADMINISTRATION OF AMYLHYDRATE.[5]

A teaspoonful of amylhydrate may be taken at night in a small glass of beer. It should be stirred for seven minutes to be sure of solution, or, of the following, one-half may be taken at night:

℞ Hydrate of amyl . . . . . ʒ i.
Water
Orange flower water } . . . . . aa ʒ ij.
Syrup of bitter orange . . . . ʒ i. M.

It is necessary to remember that amylhydrate dissolves slowly in water.

[3] Deutsche. med. Wochenschr., No. 15, 1891.
[4] Berlin klinische. Wochenschr., No. 14, 1891.
[5] Nouveau Remèdes, No. 2, 1891.

OXYGEN AS A DISTINCT REMEDY FOR DISEASE, AND A LIFE-SAVING AGENT IN EXTREME CASES.[6]

On this subject Dr. A. W. Catlin contributes an article to the *Medical Record*, 1891, *No.* 1086, and cites cases where oxygen has been used with advantage. Primarily, and for a long time exclusively, this agent has been recommended in lung difficulties — more especially to relieve dyspnœa and cyanotic conditions following in the train of pneumonia, where a large amount of lung structure is involved; another way of stating the fact that its use was deferred until the disease was far advanced, the strength exhausted, and the recuperative powers in abeyance — in other words, a last resort, as a palliative, but not as a curative. Fortunately, however, for our patients, another view is now taken of this life-saving agent, and to-day we recognize the fact that if we can, with a limited lung capacity in acute disease, pass more or less continuously the same quantum of oxygen into the blood that is normally required when no disease is present, we practically lift our patients to the plane of health, so far as functional activity is concerned, and give them a hundredfold more strength to battle with than before.

Dr. Catlin desires to show that oxygen is the most sure and satisfactory stimulant we have; that by being exhibited through the lungs and not by the stomach, its entrance into the circulation is much more certain and immediate; that its effect, felt primarily upon the heart, is almost as quickly seen at the nerve centres and in the digestive organs; that it is pre-eminently the remedy for profound shock, either from hæmorrhage or nervous drain, where vitality is at too low an ebb to take up the intricate history of assimilation and repair.

To get the best results the remedy must be administered at first freely and continuously, especially in those cases of profound shock where the depleted centres of life must have this true stimulation offered unremittingly. The only indications for a suspension of its use is a condition at once recognized by the patient, namely, super-exhilaration and dizziness, and this limitation is rarely reached in these extreme cases where the inhalations are not as deep or prolonged as they are when the strength returns and the demand for the stimulant naturally begins to limit itself. In other words, the patient, once instructed in its use and conscious of its helpfulness, is the best guide in its administration and can be safely allowed to breathe it *ad libitum*. The fear is they will not get enough, not that they will get too much. This, of course, implies that the pure gas mixed with nitrogen, two parts of the former to one of the latter, is being used.

There are many conditions under which oxygen can be exhibited always with relief, even if the nature of the case is necessarily fatal. It is no small thing to say that it relieves needless suffering.

The objection so often raised to it as a cumbersome remedy, not easily obtained on short notice, no longer holds, for depots are established in all our large cities.

DEATH AFTER SALOL.[7]

Salol is usually considered a tolerably innocuous drug, but there are not wanting clinical observations which tend to show that, under certain circumstances at least, it use may be followed by dire results. Thus a

[6] Medical Record, No. 1086, 1891.
[7] Lancet, May 23, 1891.

case was some time ago reported by Aufrecht and Behm, in which death followed its use in acute endocarditis, and more recently Dr. Chlapowski has published in a Bohemian medical journal an account of a case in which a similar fatal result followed a fifteen-grain dose ordered for a patient who was suffering from severe gastric symptoms, and who was being examined by Ewald's method. After taking the salol the patient became restless and unconscious, the pupils dilated, the pulse became irregular, there was constant vomiting, the urine became dark and contained salicylic acid. Death occurred twelve days later. At the autopsy there were found gastritis and hæmorrhagic enteritis, a gastric ulcer cicatrized at the cardiac end, chronic endometritis and cyst of the ovary. No doubt was entertained that the salol had caused the symptoms of poisoning.

[In such cases the early use of the soluble sulphates such as Glauber's salt should not be omitted. — REP.]

(To be continued.)

Reports of Societies.

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

MEETING May 9, 1891.

DR. WALTER L. BURRAGE read, by invitation, a paper on

THE APOSTOLI METHOD OF TREATMENT, ITS TECHNIQUE.[1]

DR. BLAKE was interested to know that the electrical outfit could be obtained at such a reasonable price. He had supposed the cost was many times as great.

DR. BURRAGE replied that the low price was due to the fact that all the apparatus is now made in this country.

DR. WORCESTER asked as to the possibility of tapping the electric lines which now abound everywhere.

DR. BURRAGE said that experiments have been made in this direction, but thus far no rheostat had been made which could with safety control the powerful currents used for the arc light.

DR. HAVEN suggested that the Edison incandescent light wires with a lower power had been used.

DR. O. K. NEWELL, present by invitation, then made some very interesting remarks on

CYSTOSCOPY AND LITHOLOPAXY IN THE FEMALE,

and showed the various instruments used for these purposes, many of them being his own invention, and described in papers recently published by him.

In answer to questions, he said that only two cases of stone in the bladder in very young children had been reported in this country, one by Dr. Beach, in a child of three years, the other, a case of his own, in a child of eighteen months. The largest number of these cases was reported from India. In women, stone is very rare, and is often due to the presence of some foreign body introduced through the urethra.

DR. HAVEN spoke of a girl he had treated for incontinence of urine at the City Hospital, where the bladder was much contracted, holding at first only one and a half ounces. After several months' treatment by dilatation with water, the capacity of the bladder increased to sixteen ounces, and the patient was then able to hold her urine all night. She then unfortunately stopped coming, and he does not know the subsequent history.

DR STRONG said he had used the Skene endoscope after dilating the urethra with vulcanized rubber dilators. The view is unsatisfactory, and must be much inferior to that obtained by Dr. Newell's cystoscope. He has had several cases of contracted bladder, some of which he reported before this Society last year, and he has always found the treatment to be a long one, and that the patient would often become tired and stop coming as soon as she began to improve.

DR. BAKER said that in the chronic cases in the male where the bladder is much thickened and contracted, treatment is needed for a very long time, but in the ordinary cases seen in the female, he thought that the bladder could be gradually distended to its normal capacity within three months. After the closure of vesico-vaginal fistulas the bladder is very small, but he has been surprised with the readiness with which it can be dilated, and he has found that the cure was permanent and satisfactory. This condition of contracted bladder is, he believes, often found in cases of onanism due to frequent micturition, cases where it is best to avoid local treatment.

DR. BLAKE said he had seen a large number of cases of incontinence of urine in the unmarried about twenty-five years of age, where various forms of treatment — mental, moral and drug — he had often found to be unsuccessful.

Cases due to cystitis he thought were much less resistant to treatment, and he has recently found that the application once or twice daily of a two per cent. nitrate of silver solution gives the most relief.

DR. HAVEN had found a retroverted uterus in nearly all cases of onanism referred to by Dr. Baker.

Dr. Haven reported

A CASE OF PRIMARY CARCINOMA OF THE VAGINA.

DR. BAKER remembered three cases of this form of disease: one reported by Dr. Bumstead, of New York, another case where the disease appeared on the posterior vaginal wall directly opposite a laceration of the cervix from which came a discharge, and a third case where the disease began lower down in the vagina. He thought that surfaces abraded by maceration from a decomposing discharge might very well, in old anæmic women, be the starting-point for malignant disease. Hence the great importance in these cases of local cleanliness and tonics. With Dr. Forster he had seen a case of sarcoma of the vagina.

DR. A. WORCESTER had recently under his charge a woman, twenty years of age, who suffered from antiversion of the uterus. On the posterior vaginal wall two-thirds of the way from the vulva he discovered a small, bluish mass, which grew irregular and quadrupled in size in the course of a year. A snipping showed it to be sarcoma. The patient was operated on, but did not survive.

DR. BLAKE said that the case reported by Dr. Haven was sent into his service at the City Hospital. Examined under ether, the uterus was found to be small and rudimentary, wholly free from the disease. Within a few days another case had entered his service with undoubted carcinoma of the vagina, which contained spongy masses the size of a silver dollar,

[1] See page 565 of the Journal.

showing great tendency to hæmorrhage; neither vulva nor uterus were involved.

Dr. Strong reported

A CASE OF CANCER OF THE OVARY,[2]

and showed the specimen.

Dr. Baker showed the new needle-holder of Dr. Burrage, which has been described and figured by the inventor in the *Boston Medical and Surgical Journal*. He considered it without qualification the best needle-holder he had ever used.

Dr. Newell said that Billroth sews with a needle-holder very much of the same pattern.

Dr. Haven said that the objection to aluminium for instruments was that this metal is easily dented and scratched.

Dr. Strong then spoke of the modification of Alexander's operation by Dr. Kellog, of Battle Creek. With Dr. Blake he had recently had the pleasure of seeing Dr. Kellog operate. He cuts down onto the inguinal canal instead of onto the ring, hooks in two blunt strabismus hooks, and pulls up the ligament, which is the more easily done at this point as there is more substance to it than at the ring. With a blunt aneurism needle a suture tied to a loop of the ligament is passed around outside of the conjoined tendon, thus shortening it by a double loop. In one case the operation was easily done under cocaine.

The criticism Dr. Strong would make is that he should feel doubtful of the efficacy of the single catgut stitch to keep the ligament in a new place so unnatural to it.

Dr. Blake said that Dr. Kellog claimed for his modification, that it made the operation a trivial one and did not interfere with the blood-supply, and there was hence less danger of failure. Moreover the ligament was acted on where it is large and round, and where it would therefore be less liable to break.

Dr. Haven said that he believed that a slight inflammation in the canal, stirred up by the operation, was a good thing, as it served to hold the ligament in place.

Dr. Strong agreed with this, and said that he had had only two cases where the operation failed to accomplish the purpose. In one of these, at a subsequent ovariotomy, he had found the ligament broken off at the uterine end, and in a second case the uterine ends were stretched, but at the ring the ligament held firmly. He emphasized the importance of pulling out considerable ligament.

Dr. Harrington said that he now made but one incision through which to find both ligaments. The advantage of this was a saving of time, a diminution in the amount of bleeding, more room and less wounded surface to heal. The incision made extends from the spine of the pubes on one side, with a downward curve, to the other spine. He believed in using the greatest possible aseptic precaution and in sewing up the wound without drainage.

At the annual meeting of the New York State Medical Association, held in New York on October 28th to 30th, the J. G. Orton Prize of $100 for the best short, popular essay on some subject connected with practical sanitation was awarded to Dr. Howard Van Rensselaer, of Albany, for an essay on "Impure Air, and the Ventilation of Private Dwellings."

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[2] See page 564 of the Journal.

AMERICAN GYNECOLOGICAL SOCIETY.

Sixteenth Annual Meeting held at Washington, Sept. 22–24, 1891.

The President, Dr. A. Reeves Jackson, of Chicago, called the meeting to order, and introduced Dr. Joseph Taber Johnson, of Washington, who delivered the

ADDRESS OF WELCOME.

The first scientific paper was read by Dr. J. C. Reeve, of Dayton, O., entitled,

ADVANTAGES OF MIXED NARCOSIS IN GYNECOLOGICAL SURGERY.

The author classified the peculiar features attached to gynecological operations in general, which demand a profound abolition of sensation and maintenance of this condition, as follows: (1) The length of time required for many operations. (2) The necessity for absolute quiet of the patient. (3) The great sensitiveness of the parts involved in certain plastic operations. (4) A profound impression upon the sympathetic nervous system, as when the hand is passed into the abdominal cavity, or a large tumor suddenly raised from it. (5) The dependence of the success of the operation, and even the safety of the patient, upon the absence of vomiting.

He claimed that by the combination of narcotics with anæsthetics the ordinary anæsthetic condition could be made more profound and be more steadily maintained. The method consisted in the administration of a hypodermic injection of morphia and atropia some little time before the anæsthetic. The process originated with Nussbaum in 1863, followed by Bernard in 1864, and Harley in 1869, who taught the value of atropia as a cardiac stimulant, especially where chloroform or any other cardiac paralyzing agent was used. The author has used the "mixed narcosis" in all major operations for the past twenty years, in the following proportions: sulphate of morphia, $\frac{1}{6}$ to $\frac{1}{4}$ gr.; sulphate of atropia, $\frac{1}{150}$ to $\frac{1}{120}$ gr.; dose six to eight minims of solution of sixteen grains of morphia and half a grain of atropia to the fluid ounce; the anæsthetic used was the A. C. E. mixture (alcohol one part, chloroform two parts, ether three parts).

By this method the emotional excitement of the patient is allayed, the anæsthesia is effected with great rapidity, the sense of suffocation attending the inhalation of ether is absent, the anæsthesia is steadily maintained, and the patient is absolutely quiet. A period of quiet rest and freedom from pain succeeds the operation; vomiting, sometimes so dangerous after operations, is lessened.

In regard to the safety of this method, he could find reports of but three deaths under it, in none of which was death typical of that from anæsthetics, that is, by sudden failure of cardiac action or of respiration, or of both simultaneously. In one, a grain of acetate of morphia was given subcutaneously before chloroform, (an amount of narcotic hazardous in itself), and death was by narcotism. In his own experience, he had never had an accident of any kind having used it for all kinds of operations, on patients of all conditions and ages except young children. The contrast in the same patient between the simple and mixed narcosis is strikingly in favor of the latter.

He believed this method less dangerous than the

ordinary anæsthesia for the following reasons: (1) Absence of emotion, the presence of which was often the cause of fatal accident. (2) The smaller quantity of anæsthetic required, especially advantageous in prolonged operations. (3) The shortened and diminished violence of the struggling stage. (4) The stimulating influence of atropia upon cardiac action and respiration. (5) The effect of morphia in lessening the liability to reflex inhibition of the heart. (6) Experiments on animals.

DR. J. M. BALDY, of Philadelphia, had used the mixed narcosis with ether as the anæsthetic; but where he could have full personal control of the preparation of the patient for operation, he had not found any essential difference between the two methods. He believed that most of the struggling of the patient during the anæsthesia was due to gastro-intestinal irritation, and where he had cleared out the gastro-intestinal tract prior to the operation by freely purging the patient, the patient had remained just as passive as in the cases where he had used the mixed narcosis. He had seldom seen vomiting after ether narcosis.

DR. JOHN BYRNE, of Brooklyn, had used the mixed narcosis for many years with ether as the anæsthetic, and believed that all the good effects claimed by the author of the paper could be obtained as well when ether was used as the anæsthetic as when the A. C. E. mixture was used.

DR. HENRY C. COE, of New York, read a paper on

ACCIDENTAL HÆMORRHAGE OCCURRING DURING THE FIRST STAGE OF LABOR AT TERM.

Since Dr. Goodell's paper on this subject, some twenty years ago, there has been very little added to our information concerning it. It was not the writer's purpose to discuss the entire subject of accidental hæmorrhage in the gravid womb, but simply that form which occurs during labor, which is not only the more infrequent but the more fatal form, being rarely of traumatic origin. Five-sixths of the cases have been due to injury and have occurred before term. The writer recited a fatal case in his practice.

He considered the etiology of these cases obscure, traumatism being the most frequent factor before labor. The predisposing causes were hæmorrhagic diathesis, general febrile affections, renal troubles, death of fœtus, hydramnios, diseases of the placenta. In twenty per cent. of the cases, irregular uterine contractions have been noticed. In a certain number of cases the cause was undoubtedly due to abnormal shortness or twisting of the cord. The accident could not be ascribed to a single etiological factor in the non-traumatic case; there being usually a combination of several, as irregular and imperfect uterine contractions, with extensive fatty degeneration of the placenta. What combination may lead to hæmorrhage it is difficult to state.

The symptoms are divided into two sets, initial and final, the majority of writers believing that only the latter are reliable, and are recognized too late to remedy. The writer considers accidental hæmorrhage diagnosable at its inception by watching the initial symptoms, such as irregular and feeble labor pains.

Continuous pain in the lower part of the abdomen gradually growing worse and assuming a bursting character, is one of the symptoms. Nothing abnormal may be found on external palpation, but auscultation of the fœtal heart shows it is feeble and irregular, an important symptom, indicating some serious disturbing influence to the fœtus, not accounted for by ordinary prolonged labor. The case may be mistaken for one of a simple uterine inertia, the patient being able to sit up and walk about, her pulse not being affected. All these symptoms should lead the attendant to suspect a possible commencing hæmorrhage. External bleeding would confirm the diagnosis: this symptom has been absent in three-fourths of the cases reported. The signs of internal hæmorrhage now appear, and with the arrest of the labor the patient grows weaker and may die at any moment, or the membranes may rupture, and she may be delivered and afterwards die from post-partum hæmorrhage, or shock. The writer believed that death was not unfrequently due to hyperdistention of the uterus rather than to actual loss of blood.

Accidental hæmorrhage may be mistaken for a severe attack of colic, but this error could hardly be made during the labor, if the condition of the uterus was carefully observed. It is distinguished from rupture of the uterus by the fact that the latter accident occurs during the progress of active pains usually before the rupture of the membranes, and is followed by a diminution in the size of the uterus, recession of the presenting part, and the sudden onset of symptoms of internal hæmorrhage.

In order to save the mother and child, or even the mother alone, there must be a combination of favorable circumstances — skilled and prompt attendant, unusual resistance to shock in the patient, and after delivery proper uterine contractions.

The writer's plan of treatment was, as soon as the accident was recognized to vigorously stimulate the patient by mouth, rectum, and hypodermically, while sending for aid. Under complete anæsthesia the os should be carefully dilated manually, Barnes's bags only being employed when the os was rigid and the patient's condition was such that a certain amount of delay could be safely practiced; the membranes should be preserved intact; then version should be performed with unusual care to avoid rough manipulation. At this stage ergot should be freely administered hypodermically. There should be a short delay before extraction in order to give the uterus time to recover its tone. If the head is arrested by the poorly dilated os, it should be perforated, instead of wasting time in trying to drag it out. The most important step is the prevention of post-partum hæmorrhage. Without delay the hand should be introduced into the uterus, the placenta and clots removed and the cavity tamponed with iodoform gauze.

DR. CHARLES JEWETT referred to the friability of the vessels and the conditions which favor easy separation of the placenta, also undue uterine contractions, as factors in the etiology of these cases of severe hæmorrhage. He related a case in which hæmorrhage was due to undue uterine contractions, in a malarial patient, due to twenty-grain doses of quinine three times a day. Fatal damage is often done before the symptoms are sufficiently developed to make a positive diagnosis, but there are certain premonitory signs, such as persistent pain in the abdomen during the early labor, which should keep the obstetrician on the alert, and suggest the possibility of this form of hæmorrhage. He agreed with the writer that the membranes should not be ruptured until the cervix was fully dilated. Hæmorrhage may be controlled by

the abdominal bandage before the membranes are ruptured. Delivery should be accelerated after the first stage of labor is completed, but too precipitate interference at a time when the patient is in profound condition of shock from hæmorrhage, should be avoided. He had had good results with the intra-uterine tampon of sterilized gauze.

Dr. R. A. Murray emphasized the difference in treatment before and after the os was dilated. In one case, where enlargement of the abdomen, doughy feeling of the uterine tumor, and very severe pain indicated hæmorrhage, he tamponed the uterus, compressed the arteries of the lower and upper extremities, and elevated the feet, thus keeping the brain alive, and let the uterine tumor alone; at the same time giving hypodermic injection of stimulants. Shortly afterward the os dilated, pains came on, uterus contracted, waters ruptured, child delivered, and he turned out nearly a kitchen basin full of clots. In another case where the os was dilated, he ruptured the membranes, kept the brain alive in the same manner, and delivered with forceps. In both cases the shock was most profound, fatty and calcareous placenta was the cause of hæmorrhage; external hæmorrhage was not more than a cupful when the shock was most profound. He believed that keeping the brain alive in the above manner was the determining element in his success in saving both patients. He believed in tamponing the uterus, or if the membranes had not ruptured, he would tampon the vagina, which would cause the cervix to dilate, prevent hæmorrhage and give a barrier to press against if compression of the uterus has to be made.

Dr. Henry D. Fry thought Porro's operation would be a justifiable procedure in cases of violent hæmorrhage where the cervix was not dilated. He referred to a successful case by this method which was narrated by Dr. William Smiley, in the opening address before the Obstetric Section of the British Medical Association last July.

Dr. T. A. Reamy, out of a series of 3,000 obstetric cases seen before and during labor, had only seen one case of accidental concealed ante-partum hæmorrhage sufficiently severe to be worthy of report. This case he saw in consultation, and found the patient in collapse. He delivered immediately with forceps, the head being on the perineum, and turned out two very large clots, one nearly as large as the fœtal head. The most peculiar features were extreme thinness of the uterine walls, and the immense amount of coagulated blood. The woman died before the digital examination was finished.

Dr. Edward Reynolds referred to Dr. Goodell's cases, many of which were marked early by a tumor formed of effused blood behind the placenta, indicated by the circle-shaped edge and peculiar doughy feeling. While this diagnostic sign cannot be depended on in all cases, it is so important when it does occur that it should be emphasized. If the accident is detected early he would check the hæmorrhage by manual dilatation of the os and complete evacuation of the uterus, which reduces the distension, and tends to lessen the shock from this source. In two cases where the patient was in labor and almost moribund from hæmorrhage, he had introduced a strong styptic, such as Monsel's solution, into the uterus, with instant arrest of hæmorrhage and no bad after-effects.

Dr. A. J. C. Skene considered it rather dangerous teaching to recommend Porro's operation in these cases. The mortality of this operation under much more favorable conditions would not commend it to his judgment.

Dr. T. Addis Emmet suggested inversion of the uterus and control of the hæmorrhage by ligatures.

Dr. Coe in closing the discussion, said he thought on general principles the tampon should be banished from gynecological and obstetric surgery. It was very apt to shut up discharges which should come away. An important point in diagnosis which he omitted to mention, was the introducing of the hand into the vagina, and pushing up the head of the fœtus, and if there was a concealed hæmorrhage it would escape, and the diagnosis would be cleared up at once.

Dr. Jos. E. Janvrin, of New York, read a paper entitled,

A CLINICAL STUDY OF PRIMARY CARCINOMATOUS AND SARCOMATOUS NEOPLASMS BETWEEN THE FOLDS OF THE BROAD LIGAMENTS, WITH A REPORT OF CASES.

Malignant neoplasm other than those of the ovaries sometimes do occur *primarily* between the folds of the broad ligaments.

The author gave the history of three cases, one a sarcoma of the Fallopian tube, the second a primary carcinoma of the parovarium, and the third, cystic angio-sarcoma of the left broad ligament, and lipoma of the right, with dilated tubes.

The history of all three of the cases pointed plainly to the primary development of malignant growths, — two sarcomatous, and one carcinomatous, within the folds of the broad ligament.

To the author's knowledge, Case No. 2 is the only recorded case of an adenoid hypertrophy in the parovarium undergoing degeneration and transition to a carcinoma; he also believes that there is no other recorded case of a primary carcinomatous development within the folds of the broad ligament, aside from those which develop in the ovary proper. Improper treatment may act as determining cause in giving rise to malignant growths. The first case had a clear history of trauma. The patient was treated by a homœopathic physician, who gave her repeated injections of ergotine par-vaginam into a supposed uterine fibroid. The second case had been treated by galvanism, for a sub-peritoneal fibroid.

Dr. A. W. Johnstone believed that cancers in the parovarium extending into the broad ligament were more common than was generally supposed. This organ is a remnant of fœtal life whose functional activity is at an end, having very little nerve or vascular supply. He had found true cancer in the ovary only twice, but in each case there was beginning carcinoma in both broad ligaments. Schirrus cancer was most marked in the hilum of the ovary. He believed in many cases of so-called simple ovaritis there was cancer present at the time of operation, for in six months or a year afterwards some of these cases develop cancer and death follows. If operators would examine their pedicles more carefully cancer nodules might be found at the time of operation.

Dr. A. P. Dudley agreed with the author that where there is existing pelvic disease the use of electricity or violent injections into the pelvis will cause malignant disease to spring up in the broad ligaments. He had seen one such case treated by Dr. Apostoli, and several others in New York.

Dr. A. F. King agreed, with Dr. Johnstone, that

these cancers were the result of defective nerve-supply and consequent defective government of nutrition of the tissues — a growth of cells without government. Excessive doses of electricity no doubt paralyze or destroy the governing nerves, and the tissues are cut off from their natural nutrition. Uterine cancer after the menopause might be accounted for on the same grounds, the functional activity of the uterus has ceased, and if the cells go on growing they have no nerve government.

DR. JANVRIN, in closing the discussion, said if laparotomists would examine their specimens more carefully under the microscope they might in many cases find the beginning of cancer. He believes from a long experience that nearly all cases of cancer of the uterus and its adnexa are the result of injuries. He was not a believer in the hereditary tendency to cancer to any extent.

DR. ROBERT P. HARRIS, of Philadelphia, presented a paper on

THE PRESENT AND IMPROVING STATUS OF CÆSAREAN SURGERY,

which was read by DR. WM. H. PARISH, of Philadelphia.

The author compared the Porro-Cæsarean operation and the new or improved Cæsarean operation (sometimes spoken of as Sanger's operation), the latter of which he believed was more frequently performed and with a greater degree of general success.

He regards the new Cæsarean operation as one, *per se*, of a moderate degree of risk, in the hands of a skilful operator, and with the woman in good condition. His personal experience covers thirteen cases, with only two deaths.

The greatest obstacle to the success of Cæsarean surgery, more especially in this country, is due to the fact that cases are not brought to the obstetric surgeon until the risk of using the knife has been greatly increased by the effects of labor and attempts at delivery. Out of the eighteen true Porro cases in the United States, in eight the fœtuses were already dead, and some of them commencing to decompose before the knife was resorted to. If we look over the records of the most successful work in Europe, we shall find how intimate has been the connection between the living fœtus and the subsequently saved mother. This being the case, the saving of the woman must begin with the management under the obstetrician first consulted upon her condition.

If he should happen to know the requirements for Cæsarean success the case will probably be so managed as to attain it, but if, on the contrary, he should prove to be one of the large number of half-trained obstetricians, that are the curse of poor parturient women in our large cities, the result may be decidedly adverse before he is fully aware of the necessities of the case. Perhaps the requirements of a medical education in Austria and Germany may be one of the reasons for the better results in Cæsarean surgery in their maternity hospitals, to which cases are directed by young obstetricians practising in the homes of the poor.

By a careful observance of the following, the results would be much improved: make the operation one of election; perform it either before labor, or early in its progress; urge antiseptic treatment of cases; cease experimenting; use Esmarch's elastic tubing, or strong manual compression, to control uterine hæmorrhage; when the uterus contains a dead fœtus evacuate it without the abdomen, especially if there is septic fluid and gas present.

Wash out the abdomen with distilled water (105° to 110° F.) where blood has entered or in case of threatened collapse; collar the stump, by sewing the cervical to the abdominal peritoneum so as to shut the peritoneal cavity against the entrance of septic fluid around the stump; isolate the stump from the abdominal skin by prepared packing; employment of cul-de-sac for abdominal drainage.

DR. H. MARION SIMS, of New York, related a

UNIQUE CASE OF MULTIPLE NEURO-LIPOMATA FOLLOWING LAPAROTOMY.

The patient, a strong girl of eighteen years of age, was married in 1884. She returned from her wedding trip a week later, a complete wreck. Vaginismus was the cause of this sudden change. I excised the hymen, and in a short time her nervous symptoms disappeared, and she was discharged as cured. About eight months after that I was hastily summoned to her to find her in violent convulsions, and in about the seventh month of pregnancy. Patient complained of violent pain in region of left ovary. Examination revealed an enlarged cystic ovary jammed tightly between the uterus and abdominal wall on the left side. Pressure against the ovary caused excruciating pain. By the use of nitrite of amyl, by inhalation, the patient was made tolerably comfortable up to the time of labor, when I thought she would be free from her hystero-epileptic attacks, when the pressure of the gravid uterus was removed from the ovary. Such was not the case, however, and shortly after her delivery, which was uneventful, the attacks came on with renewed violence, the other ovary also now showing signs of cystic degeneration. Her condition had now become so distressing that laparotomy was decided upon and performed, removing two very much diseased ovaries and tubes. The convulsions entirely disappeared, and she made a good recovery; and I supposed that was the last I should ever see of her.

About six months after this I was again hurriedly summoned, to find my patient in bed suffering intense pain in the abdominal wall about an inch below and to the right of the umbilicus, over an area not larger than a five-cent piece; the lightest touch with the finger-tip caused the most acute pain. After considerable difficulty I succeeded in freezing the spot, made an incision, and removed from the surrounding fat a little tumor which felt like a large duck-shot embedded under the skin. After removing it, the finger could be pushed into every corner of the wound without causing any pain whatever. On the second day I removed a nest of these growths from the abdominal wall to the left of the umbilicus. The incision was packed with antiseptic gauze. Microscopical examination showed them to consist of hardened fat and connective tissue, with a tiny nerve filament running through the whole and seemingly tightly in the grasp of the tumor itself.

This condition of recurrence continued for more than two years, and I removed these growths from every part of the abdomen, as high up as the seventh rib, there being a cessation of pain after each removal. All kinds of medication were tried, electricity and constitutional treatment, with absolutely no effect.

At the end of the second year the growths showed evidence of disappearing, and in the thirtieth month

from the first appearance of the growths, I made my last incision removing a group of them from the upper part of the left thigh. There were twenty-eight incisions in all, two on the thigh and two on the forearm, the remaining twenty-four on the abdomen.

She has now enjoyed good health for three years, which I think is sufficient time to justify me in pronouncing the case as cured. Many gynecologists and neurologists saw the case; and all agreed that it was the only case of the kind they had ever seen, nor can I find any literature on the subject whatever.

Dr. Garrigues asked if closing the incisions with sutures was contra-indicated.

Dr. Sims replied that the first incision had been closed with sutures, but there was so much fatty exudation, that all the subsequent ones had been packed with gauze and allowed to granulate.

(To be continued.)

Recent Literature.

Mental Suggestion. By Dr. J. Ochorowicz. With a Preface by Charles Richet. Translated by J. Fitzgerald, M.A. 8vo, pp. 369. The Humboldt Library of Science, Nos. 151–158. New York: The Humboldt Publishing Co. 1891.

For a long time men have believed that ideas may be conveyed from one mind to another independently of any communication through the senses. To a student of the new physiological psychology such a notion presents, *a priori*, many difficulties. The careful scientific study of the nervous system, based on certain well-established facts, cannot admit that cortical cells can be stimulated without some centripetal irritation, — that is, an irritation conveyed from the outer world, a true sensory impression, or irritation from some other group of cells in activity, an associated impression. If, now, it be established that these cortical cells can be stimulated by the action of a similar group of cells in another brain, every communication through the five senses being excluded, one of two things must follow: either there is another centripetal path excitable by unknown agencies, a sixth sense, or the whole scheme of the functions of the nervous system must be abandoned. The scientific man will, therefore, be sceptical as to thought transference until a mass of indisputable evidence has been brought forward. Such a presentation of facts will require years of the most accurate observation.

The doctrine of thought transference was brought forward and given a certain cachet of respectability by the Society for Psychical Research. To many their conclusions seemed hasty and their experiments indecisive; the patient research that does not publish until its conclusions are established was lacking, and when, later, the investigators were proved in one case to be the dupes of clever children, confidence in their subsequent discoveries received a severe blow. Independently of their researches others have investigated the problem, and one of the results of such investigations is before us.

The author admits that he has been a convert to the theory of thought transference, or "mental suggestion," for only one year. In his first chapters he gives a very full account of the sources of error which may arise in such investigations, which render the experiments remarkable merely as showing unwonted activity in certain well-recognized mental processes of perception and association. Then he goes on to give certain remarkable experiments which apparently cannot be explained by any known mental processes, unless we admit thought transference, that is, unless we admit that one mind can act upon another, apart from any mutual processes of association excited by external causes, and apart from any communication through the five senses. Here scepticism becomes the safest ground. "When there is question of an experiment in mental suggestion, I put no trust in anybody but myself," he writes. In one case "I was myself deceived." If in one case, why not in others? If he trusts no one but himself, why should we trust him? His belief that there is a process of magnetization distinct from hypnotism is certainly doubted by the majority of the best students of hypnotism; his hypnoscope has met with little acceptance; and his experiments, remarkable as they are in the telling, must be received with doubt, until thought transference has won a surer footing than it now holds. It takes a longer period of gestation to bring forth a dogma that can successfully overturn existing beliefs.

The study of these phenomena seems in some way provocative of credulity. At any rate, in the second part, where the consideration of the views of other writers is undertaken, the apparent scientific scepticism with which the author begins his work is thrown to the winds. All manner of marvels are cited with an apparent acceptance. Clairvoyance, the transfer of disease from A to B, and then a further transfer from B to C, the production of intoxication in B from wine drunk by A, the suggestion that by thought transference we may communicate with one another at a distance as we do now by telephone (a great saving!), are all reckoned among the possibilities. If these things be true, then Bulwer's "Strange Story" and "House and the Brain" will be matters of daily experience, and the "Arabian Nights" will become realistic enough to please Mr. Howells himself.

The third part is devoted to the theories which explain thought transference. The hypothesis that the writer suggests is most complex, but he implies that in some way the physical, chemical and thermal changes in the transmitting brain may set up similar actions in the brain of the transmittee, which have some analogy with the current induced in a piece of iron by the passage of a current through another piece of iron at a distance, — a hypothesis, it is needless to say, which still demands the first substantiation of proof.

The Neuroses of Development. Being the Morison Lectures for 1890. By T. S. Clouston, M.D., F.R.C.P.E. With nine illustrations. 8vo. pp. viii, 138. Edinburgh: Oliver & Boyd. 1891.

"In the course of the growth and development of the brain there are liable to occur certain failures in the attainment of a working standard of nervous and nutritional health, and the resulting defects or diseases may properly be called 'Neuroses of Development.' They have a natural relationship to each other in that they are thus developmental; and for the ultimate ætiology of them all we have to look to heredity." Such is the introduction to a work necessarily from our present lack of knowledge "imperfect and fragmentary," but full of suggestions and of the utmost importance to the general practitioner. The period of

development, that is the period which the brain requires to reach maturity, is regarded by the author as twenty-five years, and in this period the great factors are age, onset of function, and heredity. The developmental defects are therefore classified as those of the formative and embryonic stage, those of the period of most rapid brain growth (from birth to seven years), those of the period of co-ordination of motion and emotion (from seven to thirteen), and those of puberty and adolescence. The functions of the nervous system vary in the period of their development so that we may see early functions perfectly developed while later functions are absent. These variations are demonstrated in cases of idiocy and imbecility. With a bad neurotic heredity, morphological defects are very common, and physical ugliness is a characteristic trait of the majority of the degenerate, idiots, insane, neurotic, criminals, and the "submerged tenth." One of the striking morphological defects is an alteration in the shape of the hard palate, the percentage of "typical" palates in the degenerate being only one-half that of the general population. The various developmental diseases are next considered in their relations to one another and to defective heredity — infantile paralysis, Friedreich's ataxia, rickets, chorea, hysteria, adolescent insanity, epilepsy, etc. The neuroses are regarded as more or less interchangeable in heredity, but the same departure tends to return. There are two tendencies in heredity, one to revert to the normal healthy type, the other for the variation to become accentuated, leading to extinction. "The possible factors in the heredity of neuroses are so complex and multiform that it must be one of the last branches of medicine to be fully elucidated." Heredity is regarded as the predisposing cause of all these neuroses and the sole cause of many. The writer, however, uses neuroses in rather a vague way; thus, he speaks of cerebral infantile paralysis being attended by other neuroses, — squint, talipes, aphasia, etc., — disturbances often due to the location of the lesion or to purely mechanical causes secondary to the nervous lesion that causes the paralysis. The lectures close with all-too-brief hints as to treatment, which might well be expanded into another chapter. "Fatness, self-control, orderliness, are the three most important qualities for them to aim at." We recommend every physician in general or family practice to study this work carefully. By so doing he can aid the great class of the degenerate whom he sees at the outset of their career, and do something toward the prevention of the neuroses.

On the Medical and Surgical Uses of Electricity. By GEORGE M. BEARD, A.M., M.D., and A. D. ROCKWELL, A.M., M.D. Eighth edition, with 213 illustrations. 8vo, pp. xxvii, 788. New York: Wm. Wood & Co. 1891.

In the present eighth edition of this well-known work many changes and additions have been made, and two new chapters, one on the dosage of electricity, the other on the physical and physiological activities of the induced current, have been added.

INFLUENZA, of an epidemic type, appears to have rekindled in different parts of the world, especially in Europe. It has recently been reported from several towns in England, France and Germany, and is very extensive in Russia.

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THE STUDY OF THE CRIMINAL.

MANY years ago there was published in America one of the most elaborate studies in the heredity of crime and pauperism that has ever been made, but, perhaps because it was premature, perhaps because the science of criminal anthropology was then in its infancy, it led to no further researches, and, since then, with the exception of a few admirable studies of the convolutions of the criminal brain, this country has made no important contributions to the study of the criminal. In 1884, in the preface to the third edition of "L'Uomo Delinquente," names from South America are cited, but none from the United States. Yet the work done in other countries had already reached enormous proportions. Italy, of course, continues to lead the world in both the quality and the quantity of her contributions; but international congresses have been held, new journals of criminal anthropology have been started, France, Germany and Russia have done much, and England, Spain, Portugal and South America are falling into line.

It is to Italy, however, that the student must first look for aid in the study. Lombroso, "il maestro di color che sanno," with a band of zealous pupils under him, is still working at Turin with unflagging zeal, weighing and measuring the criminal in the minutest detail. His *Archivio* is in its twelfth year, and the fourth edition of his epoch-making and monumental work, "L'Uomo Delinquente," is now appearing, and French, German and Russian translations of it have also been published. It is, perhaps, still a question how far all of Lombroso's hypotheses are to be accepted, but the enormous amount of material which he has collected renders one fact reasonably clear — a fact in which almost all workers agree, whatever be their lesser differences — that criminality is as much a form of nervous degeneracy as alcoholism, insanity, epilepsy, or other nervous affections. Lombroso claims that he found but one man with the physical stigmata of the born criminal who was not a criminal. This may not be an invariable rule. Giacomini has doubted Bene-

dikt's hypotheses that there was a peculiar arrangement of the convolutions in the criminal brain. We may hesitate in spite of Lombroso's name, before accepting his hypotheses as to the identity of criminality and moral insanity, the close relations between criminality, genius and masked epilepsy, or the atavistic character of crime. Nevertheless the man who attempts to deny this main thesis, that crime is a form of degeneration, can find few men who know aught of criminal anthropology to support him.

To the October number of the *Alienist and Neurologist*, Drs. Lydston and Talbot contribute an article which is noteworthy, not only on account of its intrinsic merit, but because it is one of the first contributions to the scientific study of the criminal to be made in this country. The paper is a condensation of a more elaborate study which is promised later. The histories of eighteen picked habitual criminals are given, presenting many marked types of physical degeneracy, and a study of nine crania, chiefly of criminals, is added. These skulls show most remarkable aberrant types, they have been carefully studied; and they show marked asymmetry and irregularity. The writers are of the opinion that the more pronounced criminal types in this country are to be seen in the imported criminals, that the results of evolution and atavistic tendencies are more marked in older countries. The striking features in criminal crania which they find are the tendency to brachycephalism, submicrocephaly, and the great frequency of cranial asymmetry.

It may be objected that Drs. Lydston and Talbot have studied extreme cases and have not examined large numbers of criminals for the purpose of getting average measurements. This is in part true, yet Amadei, De Paoli, Cougnet, Bono, Lombroso, Benedikt and many others have found these cranial anomalies, perhaps less marked, in examining large numbers of criminal crania. They are certainly a departure from the normal, much commoner in the criminal than in the healthy man. Dr. Lydston argues, with justice, that a distorted skull probably means a change in the capacity of the cranium, and that it undoubtedly has an effect upon the brain. A single anomaly is not, perhaps, pathological, but when we get many anomalies, in skull, jaw, eyes, nose, ears, teeth, limbs and trunk combined, it is a strong indication of physical degeneracy, and physical degeneracy is now known to go hand-in-hand with mental and moral degeneracy.

If the objection just given be urged, although unjustly, against Dr. Lydston's work, it cannot be urged against the study of the jaws and teeth in criminals made by Dr. Talbot. He has studied the jaws of 477 criminals. Of these nearly 64 per cent. (314 criminals) presented anomalies, large or small jaws, protruding jaws, high vaults, or V-shaped or saddle-shaped arches. Dr. Talbot does not agree with Lombroso in ascribing an exaggerated development pre-eminently to homicides, nor with Ferri in ascribing small jaws to pickpockets. Nevertheless the great amount of abnormality affords further proof of physical degeneracy.

It is to be hoped that further investigations may be undertaken on the criminal in this country. The new science of criminal anthropology is likely to meet with opposition in many quarters, especially among those who cling to the old dogmas of free will and human responsibility. Even in Italy, where jurists, like Garofalo, as well as physicians, are studying crime under its new aspects, the modern views are not recognized in the new penal code. Their object is still the same as the Mikado's, "to make the punishment fit the crime." The new science changes all that, and shows that we should make the punishment fit the criminal. The born criminal is a degenerate, with a "will" impaired by bad heredity and defective brain development; he is often no more responsible for his crime than the epileptic for his fits, the paranoiac for his acts, or the drunkard for his inebriety. If taken early, he may be educated into being a tolerably useful member of society. Ordinarily, as we find him in the prisons, he is chronic, and often incurable. Our prisons do nothing to cure him, but much may be done in proper institutions, like Elmira. In default of a cure detention is requisite, as with the insane, as a protection to society; but, as with the insane, the detention must be until he is cured, or, if his case be incurable, it must be for life, whether his "crime" be petty larceny or murder.

LAPAROTOMY FOR INTESTINAL PERFORATION IN TYPHOID FEVER.

Dr. Weller Van Hook, of Chicago, reports a successful case of laparotomy for intestinal perforation in typhoid fever with recovery, two cases followed by death, and then discusses the reasons and the indications for operating.[1] In the successful case, according to the report, the history pointed indubitably to the existence of typhoid fever; the mechanical explanation of a perforation was supplied by the fact that active peristalsis had been excited by an enema; the symptoms of anxiety, pain, and shock were typical; the objective symptoms noted were supplemented four hours after the accident by a rising temperature (106°) and an increasing pulse-rate (132), plus the typical signs of peritonitis, namely, tympanites, tension of the abdominal muscles, and tenderness upon pressure over the ileo-cæcal region.

The patient was supposed to be suffering from a relapse after three weeks of a first attack. The perforation occurred on the eighth day of this so-called relapse, and the operation was performed nine hours and a half after the occurrence of the accident. One ulcer, irregularly circular in form and about two millimetres in diameter, was found in the small intestine, and the opening closed with three longitudinal rows of interrupted Lembert sutures. The patient recovered perfectly; the symptoms of typhoid, running a

[1] Medical News, November 21, 1891, p. 591.

normal course by a typical defervescence, ended in two and one-half weeks.

After a general consideration of the diagnosis and treatment of perforation in typhoid fever, Dr. Van Hook reaches the following conclusions: (1) There is no rational treatment for perforation in the course of typhoid fever, except laparotomy. (2) The indication for laparotomy when perforation occurs in typhoid fever is imperative. (3) The only contra-indication is a moribund condition of the patient. (4) Collapse is often at least temporarily relieved by hot peritoneal flushing. (5) The stage of the fever is not to be considered as an indication or as a contra-indication for laparotomy. (6) The severity of the typhoid fever is alone not a contra-indication. (7) Early laparotomy offers the most hope. (8) The symptoms of peritonitis should not be awaited before operating. (9) In taking charge of all typhoid fever patients, it is the physician's duty to be ready, in case of perforation, to perform laparotomy. (10) The published statistics of laparotomy for this condition are strongly in favor of operation. (11) The technique, though not complicated, demands much thoughtfulness, acquired dexterity, great rapidity and thoroughness.

Dr. Van Hook himself acknowledges in this paper, that the diagnosis of intestinal perforation in typhoid fever may be very easy or very difficult, but it seems to us that in drawing up his conclusions he forgets part of what he had previously admitted. The difficulty of the diagnosis in some cases detracts from the force of the conclusions.

These conclusions differ somewhat from those reached by Fitz in a very thorough *résumé* of the whole literature of the subject, read before the Association of American Physicians at its last meeting, and published in full in this JOURNAL, October 1st and 8th,— a paper to which Dr. Van Hook makes no reference.

Dr. Fitz draws the following conclusions as the result of his study of the subject:

This complication is found in about one per cent. of all cases of typhoid fever, and is the cause of death in something more than six per cent. of the fatal cases. It rarely occurs in children, and is twice as frequent in man as in woman. It is present in the small intestine in more than four-fifths of the cases, and usually proves fatal during the first week after its occurrence. It takes place in mild or severe cases, and its symptoms may be absent or latent, gradual or severe.

Differences of opinion concerning its prognosis have existed for many years, and are based upon a lack of *agreement as to the value of the symptoms*. Though these are often called characteristic, they give evidence only of a peritonitis, general or circumscribed. This may, in typhoid fever, result from a variety of causes, and fatal perforation may occur without any symptoms suggesting its presence.

Most cases of recovery from symptoms of perforation of the bowel in typhoid fever, are those in which an attack of appendicitis is closest simulated, while the great majority of the fatal cases are those in which other parts of the bowel than the appendix are perforated. It is probable that the appendix is more often inflamed and perforated in typhoid fever than has hitherto been suspected.

The prognosis of apparent perforation of the bowel, in typhoid fever, is to be regarded as the more favorable the more closely the symptoms and their course resemble those of an appendicitis.

In the treatment of this complication early laparotomy is reported to have been tried in ten cases, with but one successful result; while of twenty-seven cases of circumscribed peritonitis in typhoid fever, largely attributed to intestinal perforation, three recovered after incision, seventeen after resolution, and nine after the spontaneous discharge of pus.

It is recommended that immediate laparotomy be employed for the relief of suspected intestinal perforations in typhoid fever only in the milder cases of this disease. In all others evidence of a circumscribed peritonitis should be awaited, and may be expected in the course of a few days. Surgical relief of this condition should then be urged as soon as the patient's strength will warrant.

MEDICAL NOTES.

LEPROSY IN PARIS. — A ripple of excitement has arisen in Paris from a recently published report that there are a hundred cases of leprosy in the city, some of them in natives of the city, who have never been in infected countries. There will probably be an official investigation of the subject.

THE GERMAN PHARMACOPÆIA, appears now under the title *Artzneibuch*. This seems to have been done under the influence of a widespread desire in Germany to perpetuate things essentially German, and to resist foreign innovations, especially in language. The standing committee of the *Artzneibuch* at its last session considered 1,603 new preparations, of which all but 42 were discarded.

WOUNDS FROM MODERN BULLETS. — In an Austrian periodical, says the *Lancet*, a regimental surgeon named Thurnwald makes an interesting comparison between the wounds caused by the new small-calibre bullets and those caused by less recent forms of projectiles. His verdict is favorable. The soft parts are less bruised, and the bones less shattered. At fighting distances the bullets hardly ever remain in the body, and the wounds are smooth, clean, and of small diameter — conditions giving fair chances of recovery.

A LETTER OF PROFESSOR VIRCHOW. — Professor Virchow has published the following circular letter under date of October 25, 1891: "The completion of my seventieth year has been a cause of rejoicing to my friends more than to myself. Age, even when it does not make its full burden felt, hints at the need of resignation. My friends, however, resolved that I should once more enjoy on my birthday, a general survey of my past life, my endeavors, my labors, my successes. And they have had their way. From almost all parts of

the world the heartiest congratulations, many splendid gifts, not a few high, even the highest honors have come to me. A series of festal days elapsed and I have not even read all the letters and documents, nor estimated the measure of the recognition and attachment dedicated to me. Playmates of my early youth, schoolfellows, fellow-laborors from all directions and countries, down to my youngest pupils in the laboratory, have appeared to congratulate me. It is impossible for me to thank each individual and each body as I should like, and to tell them how happy and honored I feel that so much friendship, so much love, so much good will, still is felt for me, and how much I wish that none of it may be lost during the remainder of my life. I trust I may be permitted to express my feelings in this general letter. Only one thing I will add. My friends may rest assured that their recognition will not corrupt my heart, and that I cherish no dearer hope than that I may be permitted to consecrate my powers yet awhile, as before, to the cause of science and mankind. — Rudolf Virchow."

A Question of Satisfactory Result of Fractured Patella. — A case of interest to Surgeons came before the Supreme Court of the State of New York during a recent session in Plattsburgh. In May, 1888, a man, by a kick of a horse, supposed rupture of his left ligamentum patellæ. A surgeon attended him for two months or more, during a portion of which time the patient did some of his farm work. The union proved to be ligamentous, and was perhaps two and one-half inches long. The patient brought suit to recover $10,000, for malpractice. At the close of the presecution, counsel for defence moved a nonsuit on the ground that the evidence had failed to show that the present condition of patient's patella was in any manner due to neglect or non-skilful treatment on the part of defendant. After some argument, the Court decided to hear the defence and then give an opportunity for renewal of the motion. Much valuable expert evidence was given, to the effect that the result was a fair average, and that the defendant had properly treated plaintiff's fracture. As the evidence of both plaintiff and his expert was substantially the same as that of the defendant and his experts, the Court directed the jury to bring in a verdict of no cause of action.

BOSTON.

Opposed to Vaccination. — An intermediate passenger on the *Catalonia*, which arrived in Boston last week, having refused to allow himself to be vaccinated, has been detained at quarantine for two weeks.

Boston Streets. — At the last meeting of the Suffolk District Medical Society, Section for Clinical Medicine, Pathology and Hygiene, the improved condition of the streets of Boston was commented upon. A full report of the meeting will be published in an early issue of the Journal.

Bequests to Public Institutions. — By the will of the late Mr. T. O. H. P. Burnham the following institutions among others are given legacies: Boston Dispensary, $2,000; Children's Hospital in Boston, $5,000; Children's Home on Tyler Street, $5,000; Boston Lying-in Hospital, $5,000; Consumptives' Home in Boston, $2,000; New England Hospital for Women and Children in Boston, $2,000; Perkins Institution and Massachusetts Asylum for the Blind, $5,000; Massachusetts Society for Aiding Discharged Convicts, $2,000; Massachusetts School for Idiotic and Feeble-Minded Children, $5,000; Asylum and Farm School for Indigent Boys, $5,000; Washingtonian Home in Boston, $5,000; Massachusetts Institute of Technology, $20,000; Tufts College, $10,000; Massachusetts Agricultural College at Amherst, $5,000. The Massachusetts General Hospital is the residuary legatee, and as the estate is large, it is hoped that the hospital may ultimately receive a large bequest.

NEW YORK.

Academy of Medicine. — On Thursday evening, November 19th, at the Academy of Medicine, the Anniversary Discourse was delivered before the Fellows of the Academy and a large number of invited guests by Prof. Charles I. Chandler, who took for his subject, "Arsenic in Common Life." Afterwards a collation was served.

At a meeting of the Section on Public Health of the Academy of Medicine, held November 18th, Dr. Stephen Smith read a paper on "The Office of Coroner, with Suggestions of Reform in the City of New York." In it he advocated the abolition of the coroner's office; believing that the work now entrusted to the coroners could be more efficiently done by the Health Department and the District Attorney's office. In the discussion on the paper, Dr. Donlin, who at present holds the position of Deputy Coroner, spoke in favor of retaining the office of coroner, but made the following suggestions for improving the efficiency of the latter: increase the number of coroner's physicians; provide the morgue with more suitable appliances for making autopsies and for pathological research; provide the coroner's office with scientific apparatus and secure from it the publication of reports which would command the attention of the medical world.

Death of a Faster. — George Stratton, a man who attempted to fast for forty-five days, at one of the dime museums, has died from the results of fasting. After going for thirty-seven days and one hour on water alone, his physicians ordered him two teaspoonfuls of champagne a day. At the end of forty-one days and eighteen and one-half hours, however, symptoms of heart failure became so marked that it became necessary to stop the fast at once. The champagne which was given him while in the extremely debilitated condition that he was, appeared to bring on alcoholism, and the next day he was transferred to Bellevue Hospital. Here he was treated with stimulants and peptonized food, but was unable to rally, and died two days after admission, November 19th. The au-

topsy showed death resulted from cerebral congestion caused by alcohol, with fatty degeneration of the heart as a contributary cause. Stratton was a man thirty years old, and of immense physique. At the commencement of his fast he weighed 270¾ pounds, and at the end of it 211 pounds, 8½ ounces, a loss of nearly 60 pounds. Five other contestants commenced the fast with him on October 5th, but these all dropped out after abstaining from food for various periods varying from six to twenty days.

Verdict against a Druggist. — In a suit for $10,000 damages brought against a Brooklyn druggist in consequence of the substitution of corrosive sublimate for chloral hydrate in a prescription compounded by a clerk in his shop, the jury has awarded the plaintiff $4,000 damages. The clerk actually put up four drachms of bichloride of mercury (twenty grains to the dose), in place of the chloral ordered by the prescription. Fortunately, the patient vomited nearly all of the dose he took, but he made a narrow escape with his life, and still continues to suffer from the effects of the poison.

The Union for Concerted Moral Effort. — The first of a series of public meetings under the auspices of "The Union for Concerted Moral Effort," which is designed to enlist the sympathy and good offices of citizens of all shades of religious belief, was held on November 19th. It is stated that the first object of the movement is to secure more parks and playgrounds for the children in the crowded tenement-house districts.

The Woman's Hospital. — The thirty-sixth anniversary of the Woman's Hospital was celebrated at the hospital buildings on November 19th. The report of the work for the year, which was presented by Dr. Clement Cleveland, showed that 689 in-door and 1,481 out-door patients had been treated.

Miscellany.

FASHIONS IN DOOR-PLATES.

The custom in different cities as to door-plates and signs of physicians is described in the *Post-Graduate*.

In London a large door-plate of brass or silver is the thing. In the West End of that city, doctors seem to live together, and one may see two or three in the old-fashioned, very neat English-basement houses, that are to be found in such great number in Harley Street, Brooke Street, George Street, Grosvenor Square, and so on. In Brussels, the outside of the house is sometimes decorated *à la* New York, but generally with more taste. There, professional men do not hesitate to announce their specialty. In Berlin, where a celebrated man may be one or more flights up, a porcelain plate neatly inscribed with black letters, sometimes with the specialty, and always with the office hours, is in good form.

In Paris, there is such an absence of signs or door-plates that it is in many instances difficult to know that you are at the right house, so modest or negative are the indications. In Paris, too, distinguished specialists, sometimes live very high up, in great apartment houses without elevators. But some of the great Paris physicians live magnificently in town, and have fine country places as well.

Philadelphia and Boston, outdo New York, in the magnitude and splendor of door-plates and office-signs. It is doubtful if they are ever of any particular use, except for those who are looking for a doctor in an emergency.

A METHOD OF REMOVING AN ACUTE PNEUMOTHORAX.

The pneumothorax is a dangerous complication of penetrating wounds of the chest, partly interfering with respiration, partly with the circulation by pressure on the heart and large vessels. Dr. Witzel[1] recommends a method, which was tried in a case in Trendelenburg's clinic. His idea is to change the pneumothorax into an artificial hydrothorax and then to empty this by aspiration.

The bleeding having been arrested, a male catheter of metal is introduced into the pleural cavity through the highest points of the wound, its beak being parallel with the chest wall. The wound is thereafter closed by sutures, both air- and water-tight, with the exception of a little opening at the highest point. The pleural cavity is now generally filled with a solution of boracic acid, of the temperature of the blood, till all the air is expelled through the catheter, and all the fluid is then removed by depressing the irrigator, which then acts as a syphon. The case treated in this way progressed very favorably. The respiration was quiet and regular after the operation, the percussion and auscultation normal.

STERILIZATION OF MEDICINES FOR HYPODERMIC USE.

On making gelatine plate cultures from the more commonly-used hypodermic solutions, Dr. Marinucci reports in *Riforma Medica*, October 25th, that some, especially those of eserine and morphine, were teeming with bacteria.[2] He next proceeded to test the effects of sterilization on the above solutions, the method employed being either to boil them or to expose them for a time to a temperature of 100° C. in a Koch's steam sterilizer. He then tested the activity of the solutions thus treated as compared with the same before sterilization, and came to the following conclusions: In all the preparations studied there may develop microbes, of which, however, probably not all are harmful. Sterilization by heat does not alter solutions of strychnine, curare, bi-hydrochlorate of quinine, or borate of eserine; enfeebles, but does not alter the character of the action of morphine and atropine, so that the sterilized liquids must be used in larger doses than the non-sterilized ones; it seriously alters sulphate of eserine, rendering the solutions in great measure inert. The solutions unaffected by heat may be sterilized simply by boiling for a time in a *bain-marie*. It is recommended also to sterilize the hypodermic syringes in the same manner. For those solutions which are found to be altered by heat, an

[1] Annals of Surgery, November.
[2] British Medical Journal.

excellent method of keeping them sterile is to add corrosive sublimate in the proportion of 1 to 10,000. This is perfectly efficient, and is in no way harmful to the active drug.

TRANSFORMATION OF THE SMALL-POX VIRUS.

At the Académie de Médecine M. Chaveau read a long paper on the relations existing between small-pox and vaccine as regards the transformation of the virus.[1] He said that the idea that vaccine was only a *transformation* of small-pox continued to obtain a large number of partisans. He, on the contrary, believed that the virus in both cases proceeded from the same origin. It was true the absolute proof was not yet established, but that they were distinct affections he did not doubt. Attempts were made by a Lyons committee to transform human small-pox into vaccine by inoculating cows, but the virus remained the same as to its nature even after several cultivations, consequently it must be accepted that the simple passage of pox virus in the organism of the cow or horse is entirely incapable of changing this virus into vaccine. Vaccine never produced small-pox in man, nor did human small-pox ever become vaccine when inoculated into animals. Vaccine is not, consequently, an attenuated small-pox.

A CHINESE PATENT MEDICINE.

China is said to be fully as far along as the United States in the number of secret medicines advertised for sale. The following advertisement, from a Chinese newspaper, has recently appeared in the *Cornhill Magazine*, and goes to show that the American proprietary medicine advertiser has still something to learn from his oriental representative:

"This receipt has come down to us from a physician of the Ming Dynasty. A certain official was journeying in the hill country when he saw a woman passing southward over the mountains as if flying. In her hand she held a stick, and she was pursuing an old fellow of a hundred years. The mandarin asked the woman, saying, 'Why do you beat that old man?' 'He is my grandson,' she answered; 'for I am 500 years old, and he 111; he will not purify himself or take his medicine, and so I am beating him.' The mandarin alighted from his horse, and knelt down and did obeisance to her, saying, 'Give me, I pray you, this drug, that I may hand it down to posterity for the salvation of mankind.' Hence it got its name, the 'Fairy Recipe for Lengthening Life.'

"It will cure all affections of the five intestines and derangement of the seven emotions, constitutional debility, feebleness of limb, dimness of vision, rhematic pains in the loins and knees, and cramp in the feet. A dose is one-quarter ounce. Take it for five days, and the body will feel light; take it for ten days, and your spirits will become brisk; for twenty days, and the voice will be strong and clear, and the hands and feet supple; for one year, and white hairs become black again, and you move as though flying. Take it constantly, and all troubles will vanish, and you will pass a long life without growing old. Price per bottle, 3*s.* 3*d.*"

[1] Medical Press, November 4th.

THERAPEUTIC NOTES.

Expectorant. — Rossbach[1] recommends the following:

℞ Morphinæ hydrochlor. . . . gr. ½.
Apomorphinæ hydrochlor. . . gr. ½ to gr. i.
Acidi hydrochlorici dil. . . gtts. x.
Aquæ . . . . . ʒ v. M.
Sig. Dessertspoonful every two hours.

A New Boron Preparation. — Jaenicke[2] states that a substance, which is readily made by heating equal parts of boric acid, borax and water to the boiling-point, has proved of great service to him as an antiseptic in a number of cases, especially in the treatment of suppurative affections of the ear, employing sixteen per cent. solution of the crystals which deposit from the above mixture when allowed to cool.

Ammonium Chloride in Epidemic Influenza.[3] — In a paper recently read before the Academy of Medicine in Paris, M. Marrotte advocates the use of ammonium chloride in the treatment of epidemic influenza, more especially in those forms of the disease which are complicated with pulmonary congestion or inflammation. From 48 to 80 grains (three to five grammes) are given in twenty-four hours in the form of eight-grain powders, which may be conveniently concealed in wafers.

[1] Zeitsch. für Therap.
[2] Therap. Monatsheft., September.
[3] Merck's Bulletin, September.

RECORD OF MORTALITY

For the Week ending Saturday, November 7, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	733	267	17.22	19.32	2.94	1.96	8.86
Chicago	1,099,850	428	164	23.69	13.57	2.07	12.19	4.83
Philadelphia	1,046,964	—	—	—	—	—	—	—
Brooklyn	806,343	337	144	15.08	18.56	1.16	1.74	9.57
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,439	185	46	10.80	16.20	1.08	2.16	6.48
Baltimore	434,439	195	74	22.44	9.18	2.55	3.57	9.18
Cincinnati	296,908	—	—	—	—	—	—	—
Cleveland	262,000	90	29	24.42	14.43	4.44	3.33	15.54
New Orleans	242,039	—	—	—	—	—	—	—
Pittsburg	240,000	90	32	25.53	14.43	4.44	3.33	15.54
Milwaukee	240,000	80	37	27.50	8.75	2.50	2.50	18.75
Washington	230,392	125	33	21.60	12.80	3.20	13.60	6.40
Nashville	76,168	30	11	13.32	10.00	10.00	3.33	—
Charleston	65,168	—	—	—	—	—	—	—
Portland	36,425	8	1	—	25.00	—	—	—
Worcester	84,655	31	9	19.38	6.46	9.69	3.23	6.46
Lowell	77,696	38	10	2.68	32.16	—	—	2.63
Fall River	74,398	38	14	18.76	—	2.68	10.72	2.68
Cambridge	70,028	30	3	20.00	—	5.00	10.00	—
Lynn	55,727	11	4	18.18	18.18	9.09	—	—
Lawrence	44,654	15	7	20.00	—	6.66	—	13.33
Springfield	44,179	17	5	35.28	11.76	—	—	23.52
New Bedford	40,733	13	6	7.69	—	—	—	7.69
Salem	30,801	10	5	30.00	10.00	20.00	—	10.00
Chelsea	27,909	11	2	27.27	—	—	9.09	18.18
Haverhill	27,412	8	2	12.50	—	—	12.50	—
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	—	—	—	—	—	—	—
Gloucester	24,651	9	2	—	22.22	—	—	—
Newton	24,379	6	2	16.66	—	—	16.66	—
Malden	23,031	7	1	—	14.28	—	—	—
Fitchburg	22,037	4	1	25.00	—	—	—	—
Waltham	18,707	4	0	—	—	—	—	—
Pittsfield	17,281	5	1	—	—	—	—	—
Quincy	16,723	5	2	20.00	—	—	—	20.00
Newburyport	13,947	2	1	—	—	—	—	—
Medford	11,079	2	1	50.00	—	—	—	50.00
Hyde Park	10,193	3	0	—	—	—	—	—
Peabody	10,158	1	0	—	—	—	—	—

Deaths reported 2,566: under five years of age 916; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhœal diseases, whooping-cough, erysipelas and fevers) 478, acute lung diseases 376, consumption 275, diphtheria and croup 213, typhoid fever 123, diarrhœal diseases 60, scarlet fever 39, cerebro-spinal meningitis 12, malarial fever 12, measles 5, erysipelas 5.

From scarlet fever New York and Chicago 11 each, Brooklyn 6, Baltimore 5, Pittsburgh and Springfield 2 each, Milwaukee and Cambridge 1 each. From cerebro-spinal meningitis Chicago 6, New York 2, Boston, Cleveland, Fall River and Lynn 1 each. From malarial fever Baltimore 7, New York 5. From measles New York 3, Brooklyn and Baltimore 1 each. From erysipelas Brooklyn 2, New York, Chicago and Milwaukee 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending October 24th, the death-rate was 18.6. Deaths reported 3,362: acute diseases of the respiratory organs (London) 256, diarrhœa 136, whooping-cough 72, fever 66, measles 47, diphtheria 43, scarlet fever 26.

The death-rates ranged from 13.5 in Hull to 25.1 in Blackburn; Birmingham 18.2, Bradford 16.3, Leeds 18.9, Leicester 15.4, Liverpool 23.2, London 17.7, Manchester 22.3, Newcastle-on-Tyne 20.3, Nottingham 14.2, Sheffield 18.6.

In Edinburgh 17.5, Glasgow 19.8, Dublin 23.0.

METEOROLOGICAL RECORD.

For the week ending November 7, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S... 1	29.86	50	55	46	51	49	50	W.	W.	18	25			
M.. 2	30.22	38	44	32	47	48	48	N.W.	W.	12	6			
T.. 3	30.32	35	42	28	34	49	52	N.W.	N.W.	13	8			
W. 4	30.28	33	40	26	58	67	62	N.W.	E.	7	6			
T.. 5	30.14	37	43	31	72	66	69	N.W.	N.	5	16			
F.. 6	30.14	40	45	35	62	51	56	N.	N.	16	12			.01
S.. 7	30.06	40	47	33	56	58	57	N.	N.	16	9			
☞														

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; S., snow. † Indicates trace of rainfall. ☞ Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 14, 1891, TO NOVEMBER 20, 1891.

CAPT. EDWIN F. GARDNER, assistant surgeon, U. S. A., is relieved from further duty as attending surgeon and examiner of recruits in New York City.

Leave of absence for one month is granted CAPT. CHARLES RICHARD, assistant surgeon, U. S. A.

Leave of absence for one month, to take effect about the 15th inst, is granted BENJAMIN L. TEN EYCK, assistant surgeon.

FIRST LIEUT. HENRY C. FISHER, assistant surgeon (recently appointed), ordered to Fort Riley, Kan., for duty.

FIRST LIEUT. HENRY A. SHAW, assistant surgeon (recently appointed), ordered to Fort McKinney, Wyo., for duty.

FIRST LIEUT. SAMUEL R. DUNLOP, assistant surgeon (recently appointed), ordered to Fort Sill, Oklahoma Territory, for duty.

FIRST LIEUT. CHARLES F. KIEFFER, assistant surgeon (recently appointed), is assigned to duty at Fort Sheridan, Ill.

FIRST LIEUT. FRANK P. MERIWETHER, assistant surgeon (recently appointed), is assigned to duty at Fort Adams, R. I.

CAPT. EDGAR A. MEARNS, assistant surgeon, is relieved from duty at Fort Snelling, Minn., and assigned to duty at Fort Mackinac, Mich.

FIRST LIEUT. CHARLES WILLCOX, assistant surgeon, is relieved from duty at Fort Bowie, Ariz. Ty., and assigned to duty at Fort Gaston, Cal.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 21, 1891.

THEODORE WOOLVERTON, medical inspector, placed on the retired list, November 13, 1891.

P. H. BRYANT, assistant surgeon, detached from Coast-Survey Steamer "Gedney," and wait orders.

W. H. JONES, surgeon, ordered to examination preliminary to promotion.

SOCIETY NOTICE.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY. — This Section will hold its regular monthly meeting at 19 Boylston Place, Wednesday evening, December 2, 1891, at 8 o'clock.

Dr. George Haven will read a paper on "Rupture of the Uterus," and will report a case treated by abdominal section; Dr. Edward Reynolds will report two cases of ruptured uterus treated expectantly; Dr. M. H. Richardson and Dr. J. G. Mumford will report a case of cyst of the pancreas; Dr. E. W. Cushing will make a report and show specimen of uterine tumor removed by abdominal and vaginal section.

CHARLES L. SCUDDER, M.D., *Secretary*.

SUFFOLK DISTRICT CENSORS' EXAMINATION.

The Censors of the Suffolk District Medical Society, officiating for the Society at large, will meet for examination of candidates for admission to the Massachusetts Medical Society, at 19 Boylston Place, on Thursday, December 17, 1891, at 2.30 P. M.

Candidates should make personal application to the Secretary, and bring their medical diploma, or its equivalent, at least three days before the examination.

For further particulars, apply from 2 to 3 P. M. to

J. J. MINOT, M.D., *Sec'y*, 188 Marlborough St., Boston.

APPOINTMENTS.

HAROLD C. ERNST, M.D., has been appointed Assistant Professor of Bacteriology in the Harvard Medical School.

HENRY F. LEONARD, M.D., M.D.V., has been appointed Clinical Lecturer in the Harvard School of Veterinary Medicine.

EUGENE G. HOITT, M.D., has been reappointed Medical Examiner in Middlesex County.

CHARLES W. TOWNSEND, M.D., has been appointed Physician to Out-patients at the Massachusetts General Hospital.

RECENT DEATH.

NATHANIEL C. HUSTED, M.D., of New York, died in Tarrytown, November 19th, aged sixty-five. He graduated from the Medical Department of the University of the City of New York in 1850. During the war he served with distinction as surgeon. He has been for some time well-known among the medical men of the country. He was a frequent contributor to medical literature, and has held many positions of honor and trust.

BOOKS AND PAMPHLETS RECEIVED.

Local Boards of Health in the State of New York. Issued by the State Board of Health. Albany. 1891.

The Climate of Southern California in Relation to Disease. By William A. Edwards, M.D. Reprint. 1891.

A Treatise on Practical Anatomy. By Henry C. Boenning, M.D., Lecturer on Anatomy and Surgery in the Philadelphia School of Anatomy. Philadelphia: F. A. Davis. 1891.

The Neuroses of Development, being the Morrison Lectures for 1890. By T. S. Clouston, M.D., F.R.C.P.E., Superintendent of Royal Edinburgh Asylum for the Insane. Edinburgh: Oliver & Boyd. 1891.

Records of the Association of Acting Assistant Surgeons of the United States Army, A.D. 1891. Edited by W. Thornton Parker, M.D. Salem, Mass.: Salem Press Publishing and Printing Co. 1891.

A Practical Treatise on the Diseases of Women. By T. Gaillard Thomas, M.D., LL.D. Sixth edition. Enlarged and thoroughly revised by Paul F. Mundé, M.D. Philadelphia: Lea Brothers & Co. 1891.

Twenty-second Annual Report of the President of the Inebriates' Home, Fort Hamilton, N. Y., for the Year 1889. Twenty-third Annual Report of the President of the Inebriates' Home, Fort Hamilton, N. Y., for the Year 1890.

A Manual of Practical Obstetrics. By Edward P. Davis, A.M., M.D., Clinical Lecturer on Obstetrics in the Jefferson Medical College, etc. With one hundred and forty illustrations. Philadelphia: P. Blakiston, Son & Co. 1891.

History of Circumcision from the Earliest Times to the Present. Moral and Physical Reasons for its Performance, with a History of Eunuchism, Hermaphroditism, etc. By P. C. Remondino, M.D. Philadelphia: F. A. Davis. 1891.

Original Articles.

SOME CASES OF DILATED STOMACH.[1]

BY ELBRIDGE G. CUTLER, M.D.

Case I. M. F., thirty-five, married, housewife, born in Nova Scotia, living in Natick, had a good family history. Measles and scarlet fever in childhood. General health good till one year ago. Catamenia at seventeen, regular, painless; married at nineteen, had two children, no miscarriages. No catamenia for the past three months.

For past five years has suffered occasional dyspeptic disturbances, having distress after eating, occasional vomiting, constipation. For intervals of weeks free from symptoms. One year ago attacks became more frequent, with severe epigastric pain coming on soon after eating or independently of food, and frequent vomiting. Ten months ago vomiting of a considerable quantity of brownish material which she was told by her physician was blood. Past six months marked loss of flesh and strength (one hundred and fourteen to seventy-eight pounds), frequent attacks of pain in the epigastrium, sharp, cutting, coming on especially at night, lasting several hours, often requiring opiates for relief. Frequent vomiting of food, sometimes of dark, brownish material. Has been confined to bed for four months, and on a careful diet has been almost free from vomiting for three weeks past. No jaundice. Bowels usually constipated, at times diarrhœa. No blood observed in stools. Patient much emaciated, anæmic, cachectic. Tongue pale, clean. Pulse small, compressible. Heart: soft, systolic murmur over pulmonic area. Lungs negative. Abdomen: slight epigastric tenderness most marked at tip of sternum and over upper division of the right rectus muscle; no tumor felt in any position of patient. Right rectus muscle held firmly contracted. Urine pale, acid, 1,013, no albumen, slight sediment.

Was given four ounces of milk every two hours, and four ounces of beef juice daily. No pain, distress or vomiting from food. The stomach was washed out and distended with air when the right border was found in the right mammary line, the upper border at the level of the fifth rib, the greater curvature a hand's breadth below the umbilicus, and all the intervening space gave the same tympanitic resonance (see Fig. 4).

Next day gave a test-breakfast of meat, tea, toast, at six A. M.; washing at ten A. M., using fifty cubic centimetres warm water; about three pints of thin, watery material obtained, containing fragments of undigested food and some mucus. Slight butyric odor. Hydrochloric acid in large amount found in the washing. Iodide of potash, five grains in a gelatine capsule given when the stomach was empty, showed the reaction faintly in eleven minutes. Salol gave no reaction up to four and a half hours, and given later, not in six. Undigested food was found in the stomach repeatedly at the end of eight hours. The stomach was washed out at frequent intervals, and hydrochloric acid was always found. She began to pick up in flesh and strength immediately, and lost her pain and vomiting. Very soon the residual, if I may use the term, was reduced to two instead of three pints. Full inflation after emptying the stomach showed that it nearly filled the abdomen, and three quarts of water were easily introduced without any discomfort. The patient having improved so much as to be quite comfortable, passed out of observation.

Case II. T. J. T., referred to me by Dr. M. H. Richardson, July 22, 1890, a plumber by trade, aged forty-six, married, born and living in Boston. Had suffered from dyspepsia for some time, together with constipation; of late there had been an exacerbation of the trouble. Vomiting had been a symptom of some duration. The vomitus was frothy and smelt like yeast. There had been constipation, pain in the upper right portion of the epigastrium after food, and a sour stomach for the past four months. Vomiting occurred daily after meals a little, and every three or four days was in large quantity. When first seen he was very thin, weighing one hundred and five pounds, usual weight being about one hundred and seventy. There had been much loss of strength, so that he was unable to work and could not ride on his cart. The skin was very dry and wrinkled, the urine was scanty, he had an ashy countenance, the mouth tasted bad, and he looked very ill and miserable. The stomach, when blown up, was found to fill the abdomen except in the right hypochondriac and epigastric regions, and it reached nearly to the pubes. When washed out it readily held three quarts. The tests showed the motor activity to be almost *nil*. The first washing brought up seeds of a preserve taken nearly three weeks before. He was regularly washed out, a diet was prescribed, Carlsbad salts, an antiseptic and nutrient enemata were used, and later, a bitter, malt and iron prescribed, He went on uninterruptedly well, the vomiting, pain and general discomfort disappearing very soon. The treatment has been pursued through the year and after the first few weeks he was able to resume his usual occupation without trouble. When seen recently he looked nearly as well as ever.

Case III. H. F., plumber, aged thirty-nine, born in Cambridge, living in Brookline. Was seen October 27, 1890, and the following history obtained: Habits: moderate use of tobacco, very little alcohol, beer occasionally; family history, good; previous history, not very robust, but no serious illness. Bronchitis several years ago. Twelve years ago trouble with stomach similar in many respects to present attack, but he seldom vomited then, and distress came on immediately after eating.

Present illness began in August, with vomiting once a day, not very much at a time. Vomitus consisted of food and slimy stuff, sometimes yellow, sometimes color of milk. Much gas was passed by the mouth and also by the rectum, from the bowel. Seldom any sour fluid in the mouth. Very constipated, but bowels moved by drugs in small doses. Distress in stomach now is two or three hours after eating, and is frequently relieved by food. Has no feeling of distension or weight, but more an "empty feeling." Thinks he never had any sensitive point over stomach, or pain sharply localized, or pain in the back. Thinks he never vomited anything resembling blood or coffee grounds. Considerable loss of strength and has lost twenty pounds in weight in last two months. Has done some work right along, though the vomiting has persisted for past two months. He is a medium-sized, well-developed, rather thin man. Chest negative. Abdomen, when in the erect position, sunken in at epigastrium, and balloon-like below the umbilicus; left

[1] Read before the Boston Society for Medical Improvement, October 13, 1891.

hypochondriac region more prominent than right. Tympanitic on percussion over epigastric, left hypochondriac, umbilical, and both lumbar regions, flat over rest of abdomen. Stomach-tube introduced, the organ washed out, and blown up with air, gave a tympanitic area of uniform note, on percussion, as shown in figure. Urine pale, neutral reaction, 1,005 specific gravity, no albumen.

Salol given in five-grain capsules after a test-meal, and the urine tested every half-hour with liquor ferri chloride, failed to show the presence of salicylic acid up to the fifth hour. Iodide of potash given in three-grain capsules and the saliva tested with nitric acid and starch, showed the first faint blue color in seventeen minutes, not deep till twenty-two minutes. A test-meal given, the stomach-tube passed, and some of the contents expressed gave a very strong acid reaction, which was found to be due to an abundance of hydrochloric acid. The stomach was washed out daily for several days, and hydrochloric acid always found. He was taught to wash himself with the aid of his wife, and after regulation of the diet, was dismissed to report in a month, the patient saying he already felt some relief after only five washings, his appetite was better, and the bowels were beginning to act naturally. He has been seen a number of times since, and has been able to do full work, but has to be washed out every third or fourth day. Has taken malt, iron, and other tonics with benefit.

Case IV. J. G., married, aged twenty-eight, born in New York, living in Fitchburg, a cotton-weaver, has the following history, July, 1891. His father died of a paralytic shock, three brothers and sisters died of consumption, one of brain fever, his mother, one brother and one sister are living and well. Personal habits are moderately alcoholic, excessive use of tobacco. Had gonorrhœa eleven years ago, and a sore at the same time, was followed by sore throat, sores in mouth, eruption over body, and falling of the hair.

Personal history: Never sick till four years ago. First trouble was with the stomach. For the first two years he worked part of the time, but for the past two years has not worked at all. At first had sharp pain in the epigastrium less than half an hour after eating, vomiting of food and various colored stuff followed. Relief always came from the vomiting. Stomach much distended at times. Gaseous eructations, much gas also passed with the stools. Pain in the back very severe at times. Bowels usually move without medicine, though infrequently. Four years ago weighed one hundred and thirty-nine and one-half pounds, now during past year has lost from one hundred and sixteen at the beginning of the year to one hundred and seven now. Is very nervous, but sleeps tolerably well.

Urine pale, acid, 1,007 specific gravity, albumen a very faint trace, sediment considerable, and consists of flat epithelium cells, leucocytes, mucus, and urethral gonorrhœal strings, with a few uric acid crystals.

Examination: Rather tall, poorly developed, emaciated, marked pallor. Heart and lungs negative. Abdomen has a loose, relaxed wall, sinks in at epigastrium, protrudes below in the erect position, sense of fluctuation marked over protuberant portion with a wave on percussion, succussion on palpation. Stomach evidently much enlarged. Washed out with tube, contents very foul smelling. Abundance of free hydrochloric acid in washings. Stomach held five quarts of water without discomfort, and when filled with air took up the entire abdomen (see figure). Motor activity proved to be much diminished. Peptonized milk six ounces every two hours, beef juice eight ounces daily, scraped beef at noon. Next day washed out again and a slice of dry toast added to diet-list daily. The washings of the next two days gave great relief from discomfort each time. Patient less nervous, sleeping better, complains less of all symptoms, no vomiting since the treatment began. Complexion less muddy. Toast had to be omitted. Salicylate of sodium five grains three times a day, and Carlsbad salts, a teaspoonful once a day in eight ounces of hot water. He went on very well for a few days, when he surreptitiously took some boiled rice, which produced disturbance, and was not all removed for two days. After ten days of treatment he had become so much better that he was allowed to go home, feeling much stronger, with a better color and complexion, and feeling much elated. He was advised to continue the lavage once a day, and to use bicarbonate of soda with it, to take salicylate of sodium two grains three times a day, the diet was carefully prescribed, and he was to continue the Carlsbad and report in a month.

September 11th he was found to be immensely improved in every way, and thinking he could work a little, he was allowed to do so.

October 9th he had increased in flesh and strength markedly, and had been able to work for three weeks without much trouble.

Case V. S. G. J., aged forty-two, farmer, born and living in Raynham, single, weighs one hundred and twenty and a half pounds, July 2, 1891. Family history negative. Personal history, always well. Present illness began February 7, 1889, when he was taken with what his physician called "dumb ague," that is, he had slight fever, chilly sensations but no marked chill, vomited everything. This continued for three months. Since then has had attacks of nausea and vomiting at irregular intervals. Vomitus contains considerable mucus, but no blood. Took an ocean trip of three weeks in June, 1891, and was much relieved thereby. Complains of considerable gas on the stomach and palpitation of the heart. Has lived on milk and Mellin's food chiefly of late. Bowels constipated. Has lost twenty-five pounds in two years. He is short, well-built and fairly-nourished. Tongue coated, face pale, but not otherwise remarkable. Lungs and heart negative. Abdomen a little distended below umbilicus. Urine normally acid, 1,011, no albumen. Given milk with broths, and beef juice, three ounces, twice daily. Salicylate of sodium, five grains, thrice daily and sulphate of magnesia in the morning. Two days later vomited soup. Had chilly sensations all day. Quinine, two grains, three times a day. Next day much better, sat up and went out doors. A few days later occasional vomiting after a meal, and complained of considerable gas in the stomach. Diet increased by two raw beef sandwiches daily, and the sulphate of magnesia was increased. Next day stale bread was added to diet. Two days later complained of many curious sensations in various parts of the body, especially in the stomach and pharynx. He then had a test-breakfast given, and was washed out with the stomach-tube. Washing showed abundant hydrochloric acid. The capacity of the stomach was found to be moderately increased over the normal, holding two quarts readily. The motor activity was

found to be diminished. The patient perceived that the washing was beneficial, and asked to have it more frequently. He soon said he did "not know that he had a stomach" in the afternoon; in the morning, however, has eructations of gas, and occasionally a little fluid, some distension and nausea. He was then taught how to use the tube himself, and was advised to wash out twice a week, to take Carlsbad salts daily or every second day, to take quinine thrice a day one grain, and was sent home to report in a month.

September 29th. Weighs one hundred and thirty-five pounds. No vomiting since discharge, no pain, no eructations. Bowels have moved daily with the salts taken every second day. The treatment was continued, the patient being jubilant over his condition.

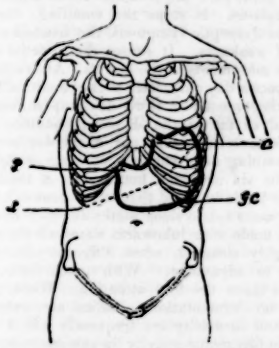

Fig 1. Position of normal stomach when distended with air. *c.* Cardiac end. *p.* Pyloric end. *g. c.* Greater curvature. *l.* Liver, lower border.

Case VI. A. M. W., seen in consultation with Dr. E. S. Boland, of South Boston, June 12, 1891. His history had been one of gastric distension, pain, uneasiness, discomfort, gaseous eructations, vomiting, loss of flesh and strength, inability to pursue his usual occupation of a business man. His appearance was quite characteristic, the countenance was sallow, he was very emaciated, weighing but one hundred and nineteen pounds, the epigastric sinking in and bulging out lower down in the abdomen was marked. The usual methods of examination were pursued, and the stomach was found to be markedly dilated, filling the greater part of abdomen. Regular washing was done by Dr. Boland, the diet and regimen was carefully marked out, certain necessary medicaments were given, and the patient began to improve at once. All his troubles were very much lessened, and on July 8th the weight was one hundred and twenty-five and one-half pounds. Hardly any gas or wind complained of.

July 24th, he had increased to one hundred and thirty and one-half pounds and had hardly any symptoms.

August 3d, had gained two pounds more.

September 14th, the weight was one hundred and thirty-six pounds. Had vomited three times since last visit, due to some errors of diet. Had gone in to his business, and borne it well. Liberal additions to his diet were made, and he was to report again in six weeks,— treatment meantime being continued.

A cursory glance even, at the Figures 1, 2, 3, which I pass round, drawn from subjects by Rosenheim, will show that the position of the greater curvature taken alone, as is usually done, gives no full information as to the true size of the stomach. It is perfectly evident from them that the mere passage of a sound to any given point, as to a hand's breadth below the umbilicus, will not necessarily indicate an enlarged stomach. For in both the vertical stomach, and in the one with downward displacement of the whole organ, this greater curvature reaches several finger breadths below the umbilicus. We can only consider the organ to be enlarged when the tympanitic resonance begins at the fifth rib in the anterior axillary line, and the right border of it reaches the right mammary line, and the lower border extends below the

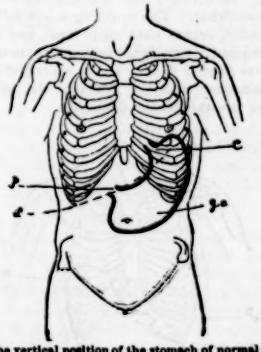

Fig. 2. The vertical position of the stomach of normal size, blown up. *c.* Cardiac end. *p.* pyloric end. *g. c.* Greater curvature. *l.* Lower border of liver.

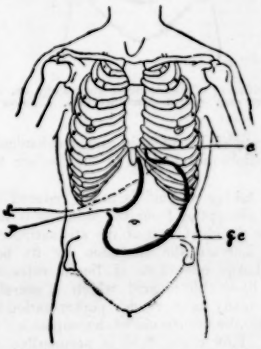

Fig. 3. Displacement downward of the normal stomach, blown up. *c.* Cardiac end. *p.* Pyloric end. *g. c.* Greater curvature. *l.* Lower border of liver.

umbilicus, and all the intervening space has the same tympanitic note on percussion. Such a stomach will readily hold more than a quart and a half of fluid or more than seventeen hundred cubic centimetres. Furthermore, there must be an interference with the motor function of the stomach if the organ be dilated and secondarily delayed absorption.

The symptoms which would lead one to consider the

possibility of dilated stomach are disturbed nutrition, constipation, dyspepsia, pressure, sense of fulness, foul eructations, pain, and lastly, vomiting. Examination of the abdomen shows a relaxed wall with sinking in of the epigastrium and distension at or below the umbilicus. The skin is dry, wrinkled, and furfuraceous, the subcutaneous fat is diminished, there may or may not be tenderness in the epigastrium, the face is ash-colored, the appetite is apt to be perverted, thirst is slight, constipation is the rule, rarely occasional diarrhœa, the tongue is frequently coated. The general discomfort is apt to be increased by taking food, so that pressure, sense of fulness, distension of the body, perhaps headache, bad taste in the mouth, acid, foul eructations and pain usually follow, which latter may be colicky, and increase till vomiting relieves it somewhat. The vomiting is apt to be frothy, yeasty in odor, occurs after each meal, and every few days is frequently very large in quantity, consisting of more or less altered food. If no contraindication exists, examination with the stomach-tube will usually enable one to establish the diagnosis.

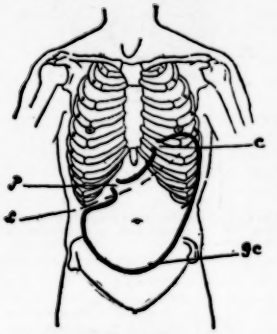

FIG. 4. Position of dilated stomach when blown up. *c*. Cardiac end. *p*. Pyloric end. *g. c*. Greater curvature. *l*. Lower border of liver.

The treatment is dietetic and mechanical. The following points in reference to the diet are to be observed:

(1) The taking of fluid is to be reduced as far as possible, as absorption from the stomach is impaired. Fluid forms the chief part of the stagnating contents, and helps increase the dilatation by its bulk and weight. Large quantities of liquid retained, help dilute the hydrochloric acid which is secreted, and thereby in many cases render peptonization difficult and facilitate the occurrence of decomposition and fermentation. How much fluid is permissible depends on the habits and characteristics of the patient. In general we may consider that about one quart *per diem* should be the maximum taken by the mouth.

(2) Solid food in small quantities should be taken about six times a day. Regard should be paid in the selection of this food to the general condition of nutrition and to the cause which underlies the dilatation.

(3) As a rule the food and drink should be cold.

(4) The kind of food should depend on the gastric secretion. If this be normal or over-abundant, a moderate quantity of carbohydrates, rather more abundant fat, and a generous supply of albuminous substances is to be allowed. If there is diminished production of hydrochloric acid and fermentation exists, we must diminish and carefully select the carbohydrates and fat, and give a moderate quantity of albuminous food with glutenous substances and wine. In enfeebled conditions a little tea and coffee may be added. Certain of the coarser articles of food must be denied, as brown bread, potatoes, cabbage, green vegetables, pickles, salads, peas, beans, etc. Frequently nutrient enemata are advisable at regular times twice a day, or rectal injections of water to supply the fluid needed by the body.

The mechanical treatment, namely, washing out the stomach, is the most important proceeding, as it removes in great part the troubles about which the patient complains. It stops the vomiting, discomfort, and all the dyspeptic symptoms, the headache and the feeling of weakness. It rouses the appetite and restores the movements of the bowels. At first it should be done once a day only, later as the condition becomes better, every second or third day may suffice. It is immaterial so far as the diseased condition of the stomach is concerned, what part of the day be selected for the washing out, whether morning or night, provided it be six or seven hours after a meal. It is only to be borne in mind that when done at night the patient is more apt to sleep better for it. The lavage should be made with lukewarm water till the stomach is thoroughly cleansed, when different solutions may be added to advantage. With much fermentation, antiseptics claim the first attention. When there is little or no fermentation, alkalies are substituted. Massage and electricity are frequently added to help restore the lost motor activity in suitable cases. Medicaments to control or counteract different symptoms are constantly demanded. Relatively few cases are benefited by surgical interference.

THE DISTRIBUTION OF DIPHTHERIA IN MASSACHUSETTS.[1]

BY SAMUEL W. ABBOTT, M.D.,
Secretary to the State Board of Health.

(Concluded from No. 22, page 561.)

THE other class, embracing the cities and manufacturing towns, 92 in number, had a population of 1,342,421 in 1880, an average of 14,591 to each city or town. These towns are much more densely populated than the former class. Most of them have a steadily increasing population, a large portion of which consists of immigrants, either of European nativity or from the British North American provinces. Five only of the towns of this class had less than 3,000 inhabitants. In many of the towns of this class there is a rural population of considerable size living in those portions outside the more densely settled villages. The actual increase in population in the rural towns, for the period of twenty years, between the census of of 1870 and that of 1890, a period nearly coincident with that under consideration, was 11¼ per cent., while that of the larger or manufacturing and urban districts was 70 per cent. Certain exceptional cities and towns

[1] Read at the Seventh Meeting of the International Congress of Hygiene and Demography, London, August, 1891.
In this paper it is to be understood that the data given includes *fatal croup*, since it is generally conceded by the physicians of Massachusetts that fatal croup, so far as the registration returns are concerned, cannot well be separated from diphtheria.

in this group are worthy of notice. Newton is neither a manufacturing nor a densely settled municipality, but a suburban residential city, with a population consisting mainly of wealthy or comparatively well-to-do inhabitants. Its general death-rate, as well as that from croup and diphtheria, has usually been low. I have placed Provincetown and Nantucket in the same group, each of which has a considerable area of nearly unoccupied sandy territory lying outside the densely settled seaport. The former had an average general death-rate, and a low diphtheria death-rate, while the latter had a very high death-rate from all causes as well as from diphtheria. Both towns are exposed to sea-breezes throughout the year.

The average annual death-rate from diphtheria and croup in the 92 densely settled towns and cities was 11.39 per 10,000 of the population, while that of the 254 rural or sparsely settled towns was 6.53 per 10,000 for the same period.

The relation of certain railway lines to the diphtheria death-rate is worthy of note. There were, during the period in question, about 2,000 miles of railway in operation in the State. Many of the towns of small size are at a considerable distance from these railways or are of so little importance that very few stations are located in such towns.

The Boston and Albany Railroad, the principal line from the seaport of Boston through the State to the West (a distance of 150 miles), carries a very large number of passengers each year, and has one or more stations in nearly every town through which it passes. The greater number of cities and towns through which this railway passes had comparatively high diphtheria death-rates. Those upon the line of the Fitchburg Railroad, another line of similar length, but having much less traffic, had lower diphtheria death-rates, while those upon the Massachusetts Central, a line of about 100 miles in length, also running east and west, but of comparatively recent construction, had, in general, still lower death-rates from the same cause.

It is also worthy of note that, out of the 28 cities, 20, including all of the most populous, except Fall River, had a death-rate from diphtheria and croup higher than the average of the State, and of these 20 were in the second group (these having from 0 to 50 per cent. higher rates than the average of the State). The remaining city, Holyoke, which had a diphtheria death-rate of 15.38 per 10,000 per year for the (1850, 3,245) period, is a thriving city of rapid growth (pop. 1890, 35,528), the principal industry of which is the manufacture of paper. It has a population in which the Canadian French form a very considerable fraction.

The metropolitan district, comprised in the city of Boston and the contiguous cities and towns of Cambridge, Somerville, Malden, Chelsea, Everett, Quincy, Lynn and Brookline, constituting a comparatively densely populated and rapidly increasing district, had a mortality-rate from diphtheria and croup which was quite uniform, and considerably above the average of the State, being very nearly 12.5 per 10,000 annually, the exception being Brookline, with a mortality-rate from these causes of 8.9 per 10,000. That of Newton, a little further out, was 7.2; and that of Woburn, 10 miles, was 6.1. Brookline and Newton are not densely populated, and the social character of their population is much better than the average of the metropolitan district.

In this connection, the effect of age distribution in the different districts of the State should be considered, since the greatest mortality from diphtheria and croup is at the younger ages of 0 to 5 and from 5 to 10 years.

The following table shows the average annual mortality at each age-period expressed as a ratio per 10,000 of the population living at those ages, for the period of 27 years, ending with 1889:

TABLE VI.

DEATH-RATES FROM DIPHTHERIA AND CROUP AT DIFFERENT AGES.

Ages.	*Diphtheria.*	*Croup.*
Under 5 years	36.87	27.56
5 to 10 "	19.80	4.63
10 to 15 "	5.38	.39
15 to 20 "	1.65	.05
20 to 30 "	.80	.02
30 to 40 "	.58	.03
40 to 50 "	.36	.02
50 to 60 "	.31	.02
60 to 70 "	.54	.01
70 to 80 "	.53	.02
Over 80 "	.41	.06

The number of deaths from which the above table is computed are 29,422 of diphtheria and 14,590 of croup.

The range of age-distribution in the different districts is very considerable, the ratio of children under five in the smallest district under consideration, and also that which has the lowest ratio, being 6.1 per cent. in Nantucket, and the highest ratio being 10.2 per cent. in Suffolk County.

The relation of the mortality from diphtheria and croup, to the population living under five years of age, may be seen in the third column of figures in Table VII, by which it appears that the rank of some of the districts is slightly changed as compared with their position in the preceding column, in those counties that have a nearly identical rank in the second column.

TABLE VII.

COUNTIES OF MASSACHUSETTS ARRANGED ACCORDING TO THEIR DEATH-RATES FROM DIPHTHERIA AND CROUP 1871-88, THE STATE BEING TAKEN AS 100, WITH DENSITY OF POPULATION EXPRESSED IN ACRES TO EACH PERSON.

Counties.	Density of Population. Acres to One Person.	Death-rates from Diphtheria and Croup. The State = 100.	
		Total Population.	To Children under Five.
Dukes	18.2	13	20
Barnstable	8.2	57	68
Franklin	11.3	61	64
Hampshire	7.1	72	78
Plymouth	4.6	75	85
Worcester	3.5	82	78
Norfolk	2.6	83	85
Bristol	1.8	92	90
Middlesex	1.2	99	97
The State	2.3	100	100
Essex	1.1	103	109
Hampden	3.0	111	107
Berkshire	7.6	115	107
Suffolk	0.06	124	123
Nantucket	12.7	161	251

For the sake of comparison with the excellent tables of Dr. Longstaff, presented in the Report of the Local Government Board of England of 1887, I have introduced another table intended to conform to Dr. Longstaff's classification. I have, in this table, divided the fourteen counties into three groups, to which the terms dense, medium, and sparse districts are applied, the first applying to those in which there is less than one acre to each person living. This includes only the metropolitan district of Suffolk County. The second (medium) applies to those in which there is one acre, but less than two acres, to each person. This comprises the counties of Essex, Middlesex and Bristol. The sparse districts, those in which there are more than two acres to each person, comprise the remaining counties. In this grouping, the small island counties of Dukes and Nantucket are reckoned with Barnstable County, their general characteristics, both of population and of climate, being quite similar.

TABLE VIII.

Counties arranged according to Density.	Counties.	Density, Acres to One Person.		Death-rate, Diphtheria and Croup.	
Districts in which there is less than one acre to each person living.	Suffolk . .	0.06		124	
Districts in which there is more than one acre to each person but less than two acres . . .	Essex . . .	1.1	av. 1.4	103	av. 100
	Middlesex .	1.2		99	
	Bristol. . .	1.8		92	
Districts in which there are more than two acres to each person.	Norfolk . .	2.6	av. 4.8	83	av. 87
	Hampden. .	3.0		111	
	Worcester .	3.5		82	
	Plymouth .	4.6		75	
	Hampshire .	7.1		72	
	Berkshire .	7.6		115	
	Barnstable, Dukes, and Nantucket.	10.1		62	
	Franklin . .	11.3		61	

In the densely settled district, having but $\frac{6}{100}$ of an acre to each person, the average annual mortality-rate from diphtheria and croup was 12.7 per 10,000 of the population.

In the medium districts, in which the average density was 1.4 acres to each person, the mortality-rate was 10.2 per 10.000.

In the sparsely settled districts, in which the average density was 4.8 acres to each person, the mortality-rate was 8.8 per 10,000 annually.

Assuming the mortality of the dense districts as 1,000, we have the following results:

Mortality from diphtheria in *dense* districts . . .	1,000
Mortality from diphtheria in *medium* districts . .	803
Mortality from diphtheria in *sparse* districts . . .	609

While these figures present a result which differs from the statistics of England and Wales, it should be remembered that they are compiled from a population less than one-tenth as large, and are, therefore, less trustworthy as sources from which conclusions are to be drawn.

In another point, however, the conclusions agree with those of Dr. Longstaff, and that is, that in the second half of the period the towns suffered, relatively, more than in the first half.

In 18 out of the 28 cities, their mortality-rate from diphtheria and croup had materially increased from the first to the second half of the period of eighteen years under consideration, and these 18 included the six largest cities in the State.

The districts which suffered most severely, taking the whole period of eighteen years, were the northern half of Berkshire County, that portion of the valley of the Connecticut River within the State, which lies in Hampshire and Hampden Counties, and the valleys of the Westfield and Chicopee Rivers, with the tributary valleys of the latter, the southern half of Worcester County, the metropolitan district about Boston, the Merrimac River valley, the southern sea-coast region of Essex County, the eastern part of Norfolk County, the eastern border of Bristol County, the north-west corner of Plymouth County, and the town of Nantucket.

Those regions which had the greatest immunity were the southern half of Berkshire County, the whole of Franklin County, the east and west parts of Hampshire County, the west part of Hampden County, the northern half of Worcester County, the north and west part of Middlesex, the north-east sea-coast district of Essex, the west half of Norfolk, the western border of Bristol, nearly all of Plymouth, and the whole of Barnstable and Dukes Counties.

In comparing the distribution of fatal diphtheria and croup in the State with that of other diseases, certain other similar inquiries relating to the other principal infectious diseases tend to show that diphtheria is "not regulated by the same causes as influence the general mortality," except that, so far as the density of population is concerned, the results of observations in Massachusetts lead us to an opposite conclusion from that which is derived from the statistics of England and Wales.

In the course of personal inspections made in many parts of the State, in city, town and country districts, my observations tend to support the following statement found in the report already quoted, with reference to the increasing severity of prevalence in towns as compared with country districts.

"If we grant for a moment the exciting cause of the disease to have its origin in the country, it is just possible that the constantly increasing communication between town and country, by affording additional opportunities of importing the disease, might account for its increased prevalence in towns.

"Although the greater proximity of people in towns would, at first sight, seem to increase greatly the chances of infection, it is by no means certain that the individuals of a town community come so much into personal contact as the dwellers in a lonely hamlet. There may be but few opportunities for the introduction of the poison into an isolated village, but once introduced there are great facilities for its spread. In a village every one knows his neighbors, whereas in a large town, dwellers in the same street are often complete strangers to each other."

In the same line of investigation, and in harmony with the foregoing quotation, the following extract from a paper presented at the eighteenth annual meeting of the American Public Health Association, held at Charleston, S. C., is herewith quoted:

"The following inquiry was directed to be made by

the State Board of Health of Massachusetts, in 1889. In a city in which diphtheria was epidemic, 100 houses were selected for examination and inspection. A recent, and quite severe, epidemic had prevailed, in which there had been 174 deaths from diphtheria in the course of the year (1889). Fifty houses were selected in which cases of diphtheria were known to have occurred within twelve months prior to the time of inspection; 50 other houses were selected in which it was known that no cases of diphtheria had occurred during the previous five years. In general terms the houses of the latter class were as nearly identical with the former in their location, construction, and the social condition of their inmates as possible. On inspection, the actual sanitary condition of these houses was found to differ but little in the two classes. Defects of plumbing, want of proper traps, leaks in drain pipes, and other similar defects, were found about equally in the two. Not one of the 100 houses had special provision for ventilation. In one point only did there appear to be a marked difference in the two classes, and that was in the ratio of damp cellars. In the houses in which diphtheria had existed, the ratio of damp cellars was as eight to five when compared to the houses of the other class. I believe this is in accord with the observations of others to the effect that where diphtheria has once been introduced from without, it finds in dampness a congenial soil for its propagation.

"If it is desired to trace the course of an epidemic of diphtheria amid the mazes of a densely crowded city, there can be no more difficult task imagined. The daily influx and efflux of population to and from the suburbs, the thronging of people in shops, markets, factories, steam-cars, horse-cars, and electric cars, the crowding together at lectures, church services, entertainments, theatres, and, finally, in the public and private schools, give the best facilities for the spread of epidemic disease. On the other hand, isolated communities occasionally present excellent opportunities for the careful study of the methods of spread of such an epidemic disease as diphtheria. Such a case presented itself to my notice during the past year. A quiet, old town in Berkshire County, near the source of the Farmington River, has comparatively little connection with the outside world. It is eighteen miles from the nearest railroad, has no hotel, and has but little regular traffic with neighboring towns. In the spring of 1888, a school-teacher, a native of this town, was employed as teacher of a school twenty-five miles distant. At the close of her term in teaching, in June, 1888, she went home ill, her illness proving, on her arrival home, to be diphtheria. Within the next six months, cases occurred in the immediate family of this young woman and those of her relatives, no quarantine having been enforced. It spread across the street to the house of the family physician. Several deaths occurred in these two families. The family of the physician was shattered, and he left the town, his house being abandoned and vacant for several months. The postmaster of the village was also the village grocer. People went to and from the post-office from the first infected house, and the grocer also made frequent visits to the house with his groceries. His family was next attacked, and so severely as to be broken up. After the house of the village physician had remained vacant several months, and some inefficient attempts at disinfection had been practised, a new physician moved into and occupied the vacant house. Soon after moving in his children were attacked. A lying-in woman whom he attended, together with her seven-year-old boy, were both attacked. A neighbor who called upon this woman was next attacked; and so the history of this epidemic could be traced from house to house, and from one individual to another, for a period of eighteen months or more. The houses of these people, which were visited, did not appear to be especially filthy, but in two or three instances excessive dampness of the neighboring soil was noticed. In the case of the physician, whose family was attacked after moving into the house which was formerly infected, the permanence of the diphtheritic germ appears to be illustrated. This history of successive outbreaks occurring in one house after the lapse of a long interval is not uncommon.

"The history of the disease in the small town to which I have referred was that of introduction from without, and then of continuous infection from one person to another through the public schools, the unwise visits of inquiring friends, the usual household visits of the grocer, the want of care on the part of the attending physician, and many other similar avenues of communicability."[3]

The foregoing observations are submitted merely as a small contribution to the history of diphtheria. So far as the writer's observations are concerned, they lend weight to the following conclusions:

(1) That diphtheria is an eminently contagious disease.

(2) That it is infectious, not only by direct exposure of the sick to the well, but also through indirect media, such as clothing, and other articles that have come in contact with the sick.

(3) That the certainty of infection is not so great as in the case of some of the other infectious diseases, notably small-pox and scarlet-fever.

(4) That overcrowding, faulty ventilation, and filthy condition of tenements favors its spread.

(5) That the influence of defective plumbing is not proven.

(6) That its transmission through public and private water-supplies is not proven.

(7) That its propagation is favored by soil-moisture, damp cellars, and general dampness of houses.

(8) That the poison may remain dormant in houses for a long period.

TABLE IX.

Cities and Towns of Massachusetts arranged in the Order of their Death-Rates from Diphtheria (1871-1888), the Rank of the State being taken as 100.

Extremes at Each End of the List.

No.		Rank.	No.		Rank.
1	Mt. Washington	0	332	Holyoke	151
2	Cummington	0	333	Hopkinton	172
3	Chilmark	0	334	Tyringham	186
4	Tolland	0	335	Clarksburg	186
5	Lincoln	6	336	Northbridge	187
6	Gill	7	337	Marblehead	188
7	Phillipston	8	338	Nantucket	189
8	Hampden	10	339	Hancock	190
9	Tisbury	10	340	Ayer	191
10	Littleton	11	341	Webster	194
11	Berlin	11	342	Williamstown	195
12	Charlton	11	343	Adams	206
13	Plainfield	12	344	Freetown	207
14	Bolton	12	345	Spencer	285
15	Wenham	12	346	Florida	332

The State = 100.

[3] "What constitutes a Filth-Disease," a paper read by S. W. Abbott, M.D., at the meeting of the American Public Health Association, at Charleston, S. C., December 18, 1890.

A CASE OF AMŒBIC DYSENTERY.

BY E. PEABODY GERRY, M.D., AND REGINALD H. FITZ, M.D., OF BOSTON.

THE medical profession of this country is greatly indebted to Professor Osler, of Baltimore,[1] for calling its attention to the presence of the amœba coli in the intestine in dysentery and in dysenteric abscesses of the liver. Although Lösch[2] first found, described and named this parasite, Kartulis deserves especial credit for his prolonged study and numerous publications concerning its relation to dysentery.

The frequency of this disease in the tropics and the numerous instances of hepatic abscess there occurring were suggestive that the amœba might be of greater significance in the dysentery of the tropics than in that of the temperate zones. The investigations of Kartulis were made in Egypt. Koch found the amœba in the intestinal wall both in Egypt and India. Dr. Osler's first patient acquired the disease in Panama. A second case reported by Lafleur[3] had been in the tropics, and a third, reported by Simon[4] had also been in the tropics, although in the latter cases a number of years had elapsed between the sojourn of the patients in the tropics and the outbreak of the dysentery. In the fourth of Osler's series of cases, reported by Lafleur,[5] there is no mention of any residence in the tropics.

Apart from the series of cases published in the *Bulletin* of the Johns Hopkins Hospital, there have, thus far, been reported in this country, three cases in Philadelphia, by Stengel,[6] in which amœbæ coli were found in the stools; one in Cincinnati, by Eichberg,[7] amœbæ being found in the stools and in pus from the liver, and one in Texas, by Dock,[8] who also found amœbæ in the intestinal mucus and in pus from the associated hepatic abscess.

The following is added to the series of cases occurring in this country since it represents one wholly confined to a more northern latitude and one in which symptoms of a paracolitis suggested the invasion by the amœba of the tissues outside the intestine, but in its immediate neighborhood.

Miss ——, twenty-five years old, had been strong and well till two years ago. She then became pale, somewhat thin and weak, while caring for a sick mother who died with bronchial disease. She recovered her flesh and strength but remained pale. During this time she was in the habit of drinking water accumulated in a cistern which was supplied from rain falling on the roof of the house in which she lived in a neighboring city.

In August, 1890, some two months after leaving this house and after her return from a short visit to the White Mountains, she noticed a whitish, solid discharge from the rectum, resembling a clot. Her bowels, at this time, were constipated, but in the course of a month, occasional discharges of small quantities of bloody mucus were observed in which were numerous white specks and streaks. Discharges of similar character, mixed with more or less semi-solid or liquid, brown fæces, and of an offensive odor have since continued, three or four times daily, despite the use of various remedies, although at one time an interval of eleven days existed without any movement of the bowels. They were painless, unaffected by food or drink and were not accompanied by loss of weight or strength. There was neither nausea, jaundice, tenderness nor tenesmus. There was considerable flatulence, and pallor of the skin was conspicuous. In the summer of 1891 the number of dejections became diminished, especially during a stay at the sea-shore.

In the last week of September, 1891, without any obvious cause, the stools became more frequent, ten to fifteen daily, and were more bloody. At the end of a week the previous character and frequency of the dejections were resumed although the latter became conspicuously more offensive. Tenderness in the right iliac fossa has persisted since this time. A slight loss of flesh now became obvious. She slept well, but lay on her back with the knees drawn up, as a lateral position produced an inclination to empty the bowels. She was then seen by Dr. George W. Gay, in consultation, who agreed in considering her case as one of ulcerative dysentery.

In the last week of October, 1891, the abdomen rapidly became swollen, the tenderness extended upwards from the right iliac fossa towards the liver, just below which it became most marked and was associated with resistance. The temperature rose from the normal to 101° F. and the pulse became 120. There was loss of appetite, drowsiness, slight sweating and frequent micturition. At this time Dr. M. H. Richardson and Dr. Fitz saw the patient in consultation.

The abdomen was then slightly and symmetrically distended, tympanitic everywhere except over a space as large as the palm of the hand at the right of the navel, between the costal cartilages and the anterior superior iliac spine, extending nearly to the median line. The dull region was tense and tender, the resistance gradually lessening towards the edge. There was neither elasticity nor a sense of fluctuation. There was slight tenderness in the hypogastrium just above the symphysis. The liver dulness was slightly increased; there was no tenderness in the hepatic region. The splenic dulness was somewhat increased, the edge of the spleen not palpable. The rectal examination was negative. There was a systolic souffle at the heart's apex and in the second left intercostal space near the sternum. The examination of the lungs showed nothing abnormal. Two stools, seen at this time, were homogeneous, soft, pap-like in consistency. They were of a brown color mixed with red from the presence of blood, and in one were clumps of reddish mucus, translucent, like sago grains.

A diagnosis was made of chronic ulcerative colitis, acute paracolitis and probable amœbæ coli in the intestine. High rectal enemata of dilute solutions of quinine (1 to 5000) were recommended in consequence of the experience of Kartulis and Osler.

The fæces were examined microscopically, at intervals, during a period of several days and amœbæ coli were always found. They appeared as round, or slightly oval bodies, varying somewhat in size, but, in general, with a diameter six or seven times that of a leucocyte. The periphery often appeared like a homogeneous, hyaline membrane, while the body of the amœbæ was composed of coarse, gray granules. Within the body a nucleus was often to be seen, also vacuoles, and, occasionally, one or more red blood corpuscles.

The fæces were brought from a distance of several

[1] Johns Hopkins Hospital Bulletin, 1890, i, 53.
[2] Virchow's Arch., 1875, lxv, 196.
[3] Johns Hopkins Hospital Bulletin, 1890, i, 91.
[4] Loc. cit., 1890, i, 97.
[5] Loc. cit., 1891, ii, 83.
[6] Medical News, 1890, lvii, 500.
[7] Loc. cit., 1891, lix, 201.
[8] New York Medical Record, 1891, xl, 7.

miles during a period of cold weather, and the amœbæ were invariably motionless, even on the hot stage. In only one instance were pseudopods present, but they remained quiescent during a period of several minutes.

The diagnosis of a paracolitis in this case of dysentery was suggested by the acute, febrile attack connected with the limitation of the sudden and sensitive induration to the course of the ascending colon, the absence of a sharply-defined edge, and the failure to appreciate the fluctuation or elasticity which usually accompany an encysted fluid near the abdominal wall. An anatomical basis for this diagnosis is furnished by the evidence given by Dr. Councilman[9] of amœbæ coli in the fat tissue of the meso-colon.

At present, ten days after the onset of the acute attack of fever and abdominal pain, the induration is very much softened and the temperature is normal.

Water which the patient was accustomed to drink was examined microscopically and found to contain small amœbæ in active motion, also a larger, quiescent variety. The latter corresponded in size with those found in the dysenteric stools. Their contents were alike coarsely granular, but were of a markedly green color.

Whatever may be said of the etiological significance of amœbæ coli in dysentery, marked diagnostic value must be attached to their presence. Although the case above reported is one which would be classified under the term dysentery, there were neither painful stools nor painful bowels during the greater part of the time. An ulcerative cæcitis or colitis of malignant or tubercular nature was suggested by both positive and negative evidence. The discovery of the amœbæ coli, in the light of our present knowledge, was almost conclusive evidence in opposition. Kartulis[10] has sought for them, in vain, in hundreds of intestinal cases other than dysentery and has found them in every case of undoubted dysentery and in all hepatic abscesses in dysentery. Osler[11] found them in pus from an hepatic abscess removed during life from a case of dysentery, and he has recently[12] found them in the sputum of a case of suspected pleurisy where there was no diarrhœa, only a little bloody mucus in consistent stools. In this last case the positive diagnosis rested upon the presence of the amœbæ in the sputum.

The accumulating evidence of the constant occurrence of the amœbæ coli in the stools, the intestinal wall and in hepatic abscesses in certain cases of dysentery, renders it highly probable that these amœbæ are of decided importance in the causation of dysentery, especially of the ulcerative variety.

Lösch[13] experimented with the amœbic stools and found that they violently irritated the mucous membrane which became ulcerated and amœbæ were found in the base of the ulcers. Kartulis[14] claims that he has successfully cultivated the amœbæ and by injection-experiments on cats, has proven that the cause of dysentery is to be found exclusively in these amœbæ. These observations require confirmation, but it may be expected in the early future that the etiological importance of amœbæ coli in certain forms of dysentery may be as definitely settled as the diagnostic value of their presence must be admitted.

[9] Johns Hopkins Hospital Bulletin, 1891, II, 84.
[10] Cblatt. f. Bakt. u. Parasitenkde, 1891, ix, 365.
[11] Johns Hopkins Hospital Bulletin, 1890, I, 97.
[12] Virchow's Arch., 1875, lxv, 196.
[13] Cblatt. f. Bakt. u. Parasitenkde, 1889, iv, 385.

Clinical Department.

INCISION OF A FALSE ILIAC ANEURISM.[1]

BY E. H. BRADFORD, M.D.

A STOUT man, with a history of previous good health, was brought to the hospital with the statement that two weeks before he had strained himself, and experienced considerable pain in the right groin. This pain had increased, and two days before entrance into the hospital he was obliged to lie in bed. He was examined by his physician, and referred to the hospital with the diagnosis of appendicitis. This appeared to be probable from the locality of the pain, and of the resistance felt in the groin. The thigh was flexed, and the patient unable to move, but the patient was not feverish, through restless, anxious and distressed, requiring opiates. The right thigh was somewhat swollen and congested. On palpation a large, indurated mass was felt in the groin, but no fluctuation was discovered, and no pulsation; though palpation was not thoroughly carried out, because of the patient's sensitiveness, which was marked. Under an anæsthetic the condition was very much the same. A large mass of induration was felt in the iliac region, and this was cut down upon in a line an inch above Poupart's ligament. The muscles were found congested, and when the peritoneum was reached, it seemed darker than normal. The incision into the peritoneum allowed a certain amount of clotted blood to escape; and as the wound was enlarged a large clot was pressed out, followed by fresh blood. The nature of the injury was then apparent. The wound was enlarged, the clots were turned out, and a jet of fresh blood about the size of the radial could be discovered issuing from the depth of the wound. Sponges were introduced into the wound to stop the bleeding; abdominal compression was applied, which controlled the bleeding; large abdominal retractors were placed in the wound; and by the use of these the bleeding-point was found at a great depth. This was finally secured by long-pressure forceps, and the bleeding stopped. Attempts, however, were made to tie the bleeding-point, but this was found impossible as the ligature invariably slipped.

Attempts were then made to dissect up the artery, and tie above and below, but this was found impossible. The cause of this was not determined until after death. The bleeding was stopped by means of pressure forceps, the forceps left in the wound and salt transfusion employed. The patient was removed from the table, but died four hours later. On examination the following condition was found: A true aneurism was discovered, arising a short distance below the bifurcation of the aorta (three-fourths of an inch), extending down to a short distance above the femoral, the internal iliac issuing from the aneurismal sac. This had ruptured, forming a large false aneurism, with the existence of clot, which had presented in the inguinal region, giving the appearance of inflammatory product. The bleeding-point was from the rupture of the sac; this was comparatively small and at the upper part of the sac. It was, of course, impossible to tie the artery; for the artery was not a simple vessel, but the sac of an aneurism, extending nearly to the aorta — beyond surgical reach.

The case is of interest, and needs to be recorded

[1] Read before the Boston Society for Medical Improvement, October 13, 1891.

not only because all serious errors in surgery, as well as successes, should be reported, but also because the case demonstrated the feasibility and ease with which the upper part of the common iliac could be reached by surgical intervention. It also illustrated with what ease the hæmorrhage was controlled by manual compression of the aorta, through the abdominal wall.

BULLET WOUND OF THE SKULL.[1]

BY E. H. BRADFORD, M.D.

AN unusual course of a bullet is illustrated by the following case:

The patient was a man twenty-two years of age, who entered the hospital January 17, 1890, with a small pistol-shot wound in the right fronto-parietal region. There was a slight amount of swelling of three quarters of an inch in front of the punctured wound. The pistol had been discharged with suicidal intent, and the hair was singed. On probing the wound, the opening into the skull could not be found, and the bone only was touched. The patient was conscious, and all motions were good; but the right pupil appeared to dilate more rapidly than the left. The pulse was ninety, and there was no shock. The patient had some headache, but otherwise was in good condition. Two days after entrance the patient was etherized, and a curved incision was made over the wound and the flap reflected. A small fragment of a bullet was found under the skin, corresponding to the swelling that was felt; and a fragment of the outer table, of the size of a five-cent piece was removed, with the bullet-hole in the centre. Under this was found, lying in the fragment of the inner table, a misshaped bullet, which was lying with the butt-end close to the dura. The bullet had struck the skull, had fractured the outer table, had fractured the inner table, and penetrated the inner table. It had turned a half-revolution, so that its butt-end lay on the dura. The bullet was removed, and a complete perforation of the bone down to the dura discovered, but without wound of the dura. The patient made a rapid recovery.

The case illustrates the lack of reliability of the probe as a means of exploration, without preliminary trephining, as the position was not discovered until after dissection of the flap of the skin covering the wound. It also shows the remarkable fact that a pistol of good size, placed against the parietal region, may penetrate the skull without penetrating the dura, and leaving the bullet in contact with the dura with — what is still more remarkable — a complete revolution of the bullet in nearly its own axis from the point of impact to the point of rest.

A CASE OF SEVERE VOMITING OF PREGNANCY.

BY EDWARD O. OTIS, M.D., BOSTON.

ON September 27th of the present year I was summoned out of town to see Mrs. S., in consultation. I found her in bed constantly vomiting and retching, with accompanying nausea and ptyalism. Her suffering and distress were painful to witness, and I was vividly reminded of a terrific day of sea-sickness I had recently experienced on the German Ocean. This was her second experience with severe vomiting of pregnancy, and before giving the details of this case I will narrate the previous one as she told it to me.

About three years ago she was married for the first time, being about eighteen or twenty years of age. Not long after her marriage, while in Southern California she received a severe nervous shock, having at that time passed a catamenial period by three weeks. Immediately upon this she journeyed to San Francisco, her home, and in a couple of days after her arrival began to feel indisposed. After three or four days' confinement in bed, nausea and vomiting began, and continued, with ever-increasing violence for a week. At the end of that time a consultation was held and an examination made. The urine was found to be highly charged with albumen, and the uterus retroflexed; in the words of the patient, "It had fallen back upon the kidneys." The temperature was said to have ranged from 101° to 104° F. From this time forward she was nourished by nutrient enemata of milk and brandy. The vomiting and nausea continued, violent and distressing; and three weeks after it first began a sponge tent was introduced into the os with the intention of producing abortion. This was repeated on the following day, and several hours afterwards, on assuming the upright position, the abortion occurred. The nausea ceased at once, and she was able to take nourishment by the mouth. The albumen in the urine rapidly decreased. The convalescence was slow, and it was not until about five months after the beginning of the catastrophe that she was well enough to be placed upon a steamer and sent down the Pacific coast on a cruise. She weighed at the time but seventy pounds. She gained rapidly, and a few days out was able to walk, and in a month's time, at the expiration of the voyage, she was nearly well.

Her husband died soon afterwards, and she remained a widow until the winter of 1890–91, when she married again, not deterred by this painful experience of the former matrimonial venture. All went well until the seventh of last September, when the catamenia, which was then due, remained absent. She was in the country at the time, and in the best of health. A little later she went to New York, and after considerable exertion and fatigue she first began to have nausea. This was on the seventeenth of the month. She returned to her home at once, the nausea increasing and the vomiting beginning. She kept about, however, until the twenty-second of September, when she took to her bed, the nausea, vomiting and retching being then almost continuous and very distressing. Her physician tried many remedies, cocaine, menthol, pepsine, bismuth, oxalate of cerium, chloroform, water, etc., but of no avail. When I saw her for the first time, on the twenty-seventh of the month, she presented a pitiful picture, vomiting or retching continually, and constantly harassed with ptyalism and thirst. On vaginal examination I found the os far back in the left posterior corner of the vagina, and the uterus, so far as I could make out, laterally anteflexed. The os was small and firm. There was no rise of temperature at this or any time during her illness; on the contrary, it was a good deal of the time slightly below normal. The daily amount of urine was much reduced, ranging from ℥v + to ℥xxviss +. There was no albumen. The pulse was fair and between 80 and 90. She was having enemata of peptonized milk and brandy every four

[1] Read before the Boston Society for Medical Improvement, October 12, 1891.

hours, and from time to time subcutaneous injections of morphia and atropia. She would sleep or doze occasionally an hour or two at a time. The experience of her previous pregnancy was vividly before her mind, and she was convinced that nothing would relieve her except the production of an abortion which she was eager to have consummated, and in which desire her husband concurred.

Our first attempt was to paint the os with tincture of iodine which was without result, as was also the application of belladonna. I then essayed to dilate the os by means of improvised dilators — none others being at hand — digital dilatation being impossible on account of the depth of the cervix uteri in the vagina. In this attempt I was, however, not very successful, on account of the rigidity of the os. I applied a tampon, and advised warm bichloride douches daily, which were given. At this time and subsequently considerable mucus, occasionally tinged with blood, was found exuding from the os. No amelioration of the symptoms following, and the condition seeming alarming, the next attempt was to produce an abortion by the passage of a sound, and then of a catheter, which was allowed to remain *in situ*, but with no success; probably neither was passed fully into the uterus. She was by this time weak and exceedingly nervous, and any manipulation was difficult.

On the following Sunday, October 4th, about two weeks from the beginning of the attack, a large Tupelo tent was passed well through the outer os, and allowed to remain there a greater part of the day. This effected a thorough dilatation. Nausea ceased almost at once, and she felt as if she could eat something; but the vomiting still continued, and it was not until three or four days later that she was able to retain some nourishment.

On Tuesday, October 6th, she was given along with the nutrient enemata, forty grains of bromide of potash and fifteen of chloral hydrate, twice or three times in the twenty-four hours for a day or two, and after that once at bed-time. The subcutaneous injections of morphia and atropia were also continued. On Friday night, October 9th, she vomited for the last time, and in a day or two was eating with relish a variety of food.

Four weeks after she first went to bed, she sat up for the first time. For seventeen days she had vomited almost continually. So far as could be estimated, she had lost from fifteen to twenty pounds of flesh. At the present time, some seven weeks from the beginning of her sickness, she is entirely free from nausea and vomiting, and eats well. Everything seems to indicate a comfortable pregnancy; and both the physicians, patient and husband are congratulating themselves that the attempt to produce an abortion was not successful.

I have reported this case because I believe the experience with every severe case of pregnancy vomiting is valuable enough to be recorded. Surely, but few cases occurring in general practice give the physician so much anxiety as these. What was the cause of the vomiting in this case, and what produced the cure? The cause, in my opinion, was the reflex excitement from the irritation of an anteflexed pregnant uterus, with more or less rigidity of the tissues of the cervix. That the full dilatation of the cervix had much to do with the cure is undoubted, for the nausea ceased at once, although the vomiting continued several days longer. When we consider the success Copeman had with this procedure, perhaps it was the sole cause. Whether or not the bromide and chloral given the last few days of the vomiting exercised any favorable influence I cannot say; it seems to me, however, that they helped on a good work already begun by the dilatation. In such severe cases all attempts at medication by the mouth seems to me to be worse than useless. Copeman's dilatation treatment, replacement and elevation of an anteflexed or retroflexed uterus are what must be depended upon, it seems to me, if a cure is to be obtained at a less cost than the induction of abortion.

PTYALISM IN FIVE SUCCESSIVE PREGNANCIES.

BY BARTON COOKE HIRST, M.D.

Mrs. F. has been married four years, and is pregnant for the fifth time. The previous pregnancies have all been artificially interrupted for ptyalism and vomiting, the first at the fifth month, the others before the third month. The patient states that these symptoms have appeared within a few days after impregnation, and that they reduce her strength to the last degree. She is firmly convinced from past experience that she could not survive a pregnancy protracted beyond the first two or three months, and her husband shares her belief. The saliva is poured out from the glands profusely, and must be swallowed in large amounts or else expectorated constantly. The nausea and vomiting seem to be secondary to the ptyalism. They are exaggerated, but not to a degree that could be called pernicious or uncontrollable.

The woman has an idea, suggested by her husband, that the excessive secretion of saliva can be to some extent controlled by chewing gum candies, which she does day and night, going to bed with a box full by her side. She is, of course, highly hysterical.

On examination, the uterus was found normal in size, consistency and position for the second month of pregnancy; it was freely movable, and there was no trace of inflammatory action, old or recent, in the broad ligaments. I was called in consultation to the case, with the expectation on the part of the family, that I would at once induce abortion. This I refused to do, as the woman's life was in no danger whatever. I expressed the opinion that a rigid discipline and a modified "rest cure" would very likely get the better of the hysterical symptoms and possibly of the ptyalism, and that pregnancy could be continued to term without special danger. This opinion was evidently unacceptable to the wife and the husband, and I have no doubt that by this time other medical advice has been sought and that the embryo has been sacrificed.

It is generally conceded that marked salivation in pregnancy is an infrequent occurrence. Its recurrence in a number of successive pregnancies seems to be very rare indeed. Baudelocque described a case which is referred to by Winckel, who does not appear to have encountered a similar instance in his large experience. Other modern obstetrical works are silent on the subject.

In a recent lecture Professor Billroth spoke on the effect of the new rifle in war, and declared that the ambulance department in Austria would be absolutely inadequate to deal with the vast number of the wounded.

Medical Progress.

RECENT PROGRESS IN THERAPEUTICS.

BY FRANCIS H. WILLIAMS, M.D.

(Concluded from No. 22, page 572.)

SUBCUTANEOUS INJECTIONS OF CARBOLIC ACID IN ACUTE ARTICULAR RHEUMATISM.[8]

In 1875 Senator published a paper in which he pointed out that marked alleviation of the local and some amelioration of the general symptoms quickly followed the subcutaneous injection of a strong solution of carbolic acid into the neighborhood of the affected joints. This was accomplished without any appreciable ill effects to the patients.

Dr. A. L. Gillespie has tried this treatment in twenty-four cases and publishes notes of five of them. He injected from four to ten minims of a ten per cent. solution (?) of carbolic acid. [As carbolic acid is not sufficiently soluble in water to make a ten per cent. solution, some other solvent must have been added to the water.—REP.] A grain of the pure acid can be given at a dose.

In some cases relief is speedily afforded and the patients often begged for a repetition of the injection when another joint became painful.

It is said to be of special value in cases of gonorrhœal rheumatism in which no relief has followed the use of salicylates, but does not seem to act so well when many of the joints are affected.

It is best to pass the point of the hypodermic needle through the skin obliquely and judging where the synovial membrane is to inject the fluid as close outside the sac as possible.

Injected into the sac itself a ten per cent. solution of carbolic acid precipitates the albumen present in its serous contents.

The rationale of the rapid disappearance is, first, that it is due to the powerful, local anæsthetic action of the acid; secondly, to some slight specific action against the rheumatic poison exerted by it.

WHOOPING-COUGH TREATED BY ATOMIZATION.[9]

Dr. H. Ernest Schmid states that he now relies entirely upon atomization for the treatment of whooping cough in all stages of the disease. The spray which he uses is made up as follows:

℞	Carbolic acid	grs. vi.
	Menthol, 4% solution	iv.
	Cocaine, 3% solution	iij.
	Glycerine	ʒ i.
	Cherry laurel water, q. s., ad. . .	ʒ i. M.

This solution should be thoroughly used, brutally, if necessary, by an atomizer every three hours; force may be employed if necessary, and disregarding any apparent strangling upon the part of the little one during vigorous atomization, the nozzle of the instrument should be directed as far into the mouth of the little one as possible. During the struggling and sputtering and strangling some deep respirations will before long be made, and the object is accomplished. At first, in most cases, a violent paroxysm of coughing may result from the spraying, especially if much force has to be used with the child, but these soon cease and palpably good effects are soon noticed by the parents. The point is to be able to impress the importance of perseverance on them. Dr. Schmid has seen whooping-cough arrested by this means after one thorough spraying, the cough continuing without the whoop for a while, and perfect recovery has followed in one or two weeks. From his success he feels justified in claiming that the method promises to be more efficient than other methods of treating the disease.

USE OF PURE BENZOLE IN WHOOPING-COUGH.[10]

Dr. W. Robertson, after some years' experience with the use of benzole in whooping cough, is satisfied that it effects better results than all the other remedies recognized as useful in this affection. In adult and child it is of equal benefit. In an infant just now under treatment the attacks had been reduced from twenty or thirty in the night to two or three, and whereas when the treatment was begun evidences of bronchitis were present, now the chest is clear, and the child able to be taken out of doors daily. All this improvement was brought about in less than ten days. In cases where convulsions and other complications were fast reducing all chance of recovery, its use was attended with perfect success within a few days. In adults, where pertussis assumes often serious aspects, benzole has proved equally efficacious. Two minims in mucilage are sufficient for a child six months old, and five minims in mucilage, on sugar, or in capsule, for adults. Whenever the benzole odor is observed in the breath of the patient, then all anxiety as to the result may be allayed.

COMMON THYME IN WHOOPING-COUGH.

Common thyme, which was recommended in whooping-cough three or four years ago by Dr. S. B. Johnson, is regarded by Dr. Neovius, who writes a paper on the subject in a Finnish medical journal as almost worthy of the title of a specific. During an epidemic of whooping-cough he had ample opportunities for observing its effects, and he came to the conclusion that if it is given early and constantly, it invariably cuts short the disease in a fortnight, the symptoms generally vanishing in two or three days. They are liable to return if the thyme is not taken regularly for at least two or three weeks. He gives from one ounce and a half to six ounces per diem, combined with a little marshmallow syrup. It may produce a slight diarrhœa; it is important that the drug should be used quite fresh.

SUBCUTANEOUS INJECTIONS OF STRYCHINE IN TEN CASES OF CHRONIC ALCOHOLISM.[11]

Dr. Ergloski has published an account of ten cases of chronic alcoholism among his patients. They had the habit of taking brandy. They were given subcutaneous injections of nitrate of strychnine, one sixtieth to one twentieth of a grain at each injection. After a dozen injections the results were remarkable as they all acquired a distaste for brandy. In such cases as are desirous of being cured this treatment may prove to be of assistance.

IN ACUTE BRONCHITIS.[12]

A simple expectorant mixture in acute bronchitis is:

℞	Ammon. muriat.	ʒ ss.
	Mist. glycyrrhiz. comp.	ʒ iv. M.

Sig. Take a dessertspoonful every four hours. The dose is smaller in the extremes of life, and in severe cough it is given every three hours.

[8] Medical Press, 1891, No. 2719.
[9] Medical Record, June 13, 1891.
[10] Lancet, vol. vi, 1891.
[11] Bulletin Général de Thérapeutique, No. 20, 1891.
[12] Therapeutic Gazette, July, 1891.

Tablets of the muriate of ammonium and the compound liquorice mixture are very efficient. When the secretions are brought up with difficulty, the use of senega is advised. When the secretions are abundant and not easily coughed up, turpentine in emulsion is an excellent remedy, not so pleasant, perhaps, as terebene or terpine hydrate, but rarely failing to do good in properly selected cases. The formula, with occasional modifications to suit particular cases, is:

℞ Ol. terebinthin . . . . . ʒij. to ʒ iij.
Mucil acaciæ . . . . . q. s.
Ag cinnamomi . . . . . ʒ i.
Aquæ, q. s., ad. . . . . ʒ iv. M.
Sig. A tablespoonful in a little water every four hours.

Oftentimes the cough is of such an irritating character that these ordinary expectorant mixtures avail little; then recourse must be had to a narcotic in some form. Codeine, a very useful alkaloid of opium, has the advantage of not constipating as much as morphine.

A good combination is:

℞ Codeinæ sulphat. . . . . grs. viij.
Syr. prun. virginian. . . . . ʒ ij. M.
Sig. A teaspoonful in a little water three or four times a day, and at bed-time if necessary.

ALOIN.

Prof. Hans Meyer, of Marbury, has examined chemically and physiologically the aloin obtained from various kinds of aloes. From the Barbadoes and Curaçoa he obtained the same crystalline substance. Natal aloes yielded a somewhat different aloin. In experiments on animals and on man the aloin was given *per os*, and also subcutaneously. The aloin can be detected in the fæces and urine by tests, which are given at length and which are extremely delicate. Experiments showed that aloin acted with certainty as a purgative, whether given by the mouth or subcutaneously. The dose in both cases is about the same, which is explained by the fact that aloin, when given subcutaneously, is excreted from the blood chiefly into the bowel, only a mere trace, or none, being found in the urine. In man, dogs and cats there is no albuminuria after subcutaneous injection; but in rabbits, in which animal aloes does not cause purgation, subcutaneous administration is always followed by inflammation of the kidneys, albuminuria and death. Its purgative action is as slow when it is given hypodermically as it is *per os*. Natal aloin by subcutaneous injection is always active. In man, on an ordinary mixed diet, it had but little effect, but in man fed exclusively upon an animal diet, it was much more active. The reason probably is that in the latter case the putrefactive processes in the intestine are much more marked, and the aloin is decomposed into a more active substance. All the experiments seem to point to the conclusion that aloin itself is not an active purgative, but that it becomes gradually decomposed in the intestine into a more active body, and hence the slowness of its action.

OPIATES IN ACUTE PERITONITIS.[28]

Dr. Stephen Smith directs attention again to the importance of large doses of opium in treating acute peritonitis.

Under Prof. Alonzo Clark's direction, he treated six cases in 1840. The patients were seen every hour, the pulse and respiration closely watched. The quantity of opium was to be determined by the effects produced, not at all by the amount administered. The condition to be secured was that of semi narcotism; this was to be determined by the degree of stupor and the respiration; the patient must require to be shaken to be aroused to consciousness; and the respiration might fall to twelve per minute, but not below that figure.

At the outset each patient received one grain every hour for three doses. No effect being perceptible, the dose was increased to two grains every hour, and continued for three doses. Failing with this dosage, the opium was increased to three grains every hour. In four cases this amount of opium had the desired effect, and it was continued in that amount. In the remaining cases it had to be increased to four grains every hour. One of these remaining cases yielded to this amount, and the opiate was continued at that rate.

The sixth case was much more obstinate, and the opium was steadily increased until the dose reached was twelve grains every hour. This amount simply secured a light, but continuous, sleep, from which she readily awoke on placing the hand upon her wrist to examine her pulse.

The first four cases continued to receive three grains of opium every hour for three or four days, when the pulse fell to its normal standard, the tympanites subsided, the tenderness of the abdomen disappeared, and the patients were evidently convalescent. The opium was discontinued; they rapidly recovered and remained well.

In the fifth case, on the fourth night the patient was given so much opium, four-grain doses, that she was too deeply narcotized; she was without pulse, pale, and with only four respirations per minute. Active measures were taken to recover the patient from her profound narcotism. After several hours of continuous effort she was regarded as securely restored. All symptoms of peritonitis now rapidly subsided; the pulse had fallen from 112 to 92 per minute, the tympanites and tenderness had disappeared, and she expressed herself as feeling well. Within twenty-four hours all evidences of peritonitis recurred, and the treatment was renewed, three grains of opium being given instead of four. Semi-narcotism was readily produced, and after a brief period the symptoms again subsided; the treatment was suspended, and she was perfectly cured.

The sixth case proved an anomaly in tolerance of opiates. During twelve days the treatment was persevered in, the pulse remaining at about 120, the respirations 34–36, the abdomen greatly distended and tender to the touch, lancinating pains, the features pinched, perspiration at intervals, etc. During these twelve days the patient took the equivalent of 1,950 grains of opium, and she neither vomited during that time nor had an evacuation from her bowels. At no time was she so narcotized that she would not awaken when a hand was placed upon her wrist. She remained in the hospital as an assistant in the laundry for six months after her recovery, and during that time was an excellent help.

Professor Clark thus describes the method of medication: the plan is to begin with a dose that is safe, say two or three grains of opium, or its equivalent of sulphate of morphine, and in two hours notice its effect. If any of the opium symptoms have appeared, repeat the dose; if not, increase by one grain, and so on, at intervals of two hours, till the degree of tolerance in the patient is ascertained. After that the case

[28] Medical Record, vol. xxxix, No. 23, 1891.

can be treated by a diminished occupation of the physician's time — two or three visits a day. The dose is to be increased if the opium symptoms diminish, or discontinued if narcotism is approaching. The duration of the treatment will be sometimes no more than two or three days; it may be a week, or even a fortnight; and in one case the symptoms persisted mildly for forty days, and then yielded.

In this case the medicine used was sulphate of morphine, and the enormous dose reached, by steady and gradual increase, was one grain and a quarter every forty minutes, in a boy ten years old.

Of the several signs of opiumism, there is none more valuable than the frequency of the respiration; and while the physician aims to reduce it to twelve in a minute, there are chances that he will see it fall to something below that. Professor Clark does not explain the curative action of opium in peritonitis, but Prof. Fordyce Barker, who had a large and varied experience in puerperal peritonitis in Bellevue Hospital, considered opium the most important of all agents in arresting and controlling this disease. By it the peristaltic movements are retarded or arrested, and thus the inflamed tissues have absolute rest, pain is annulled, emotional excitement is allayed, the nervous system is tranquilized, sleep is secured, and thus the depression of the vital forces resulting from the shock of the attack is lessened.

CORROSIVE SUBLIMATE AS A DISINFECTANT.[16]

Experiments published by Dr. A. C. Abbott, made in the Pathological Laboratory of the Johns Hopkins Hospital, have a very practical bearing upon the value of corrosive sublimate as a germicide, and the results of these experiments lessen the high estimation in which this agent has been held by the majority of investigators.

Dr. Abbott selected the staphylococcus pyogenes aureus for a series of experiments as to germicide power in consequence of the importance of the subject to the surgeon.

The tests hitherto made upon corrosive sublimate as a disinfectant have agreed in giving to it the first place in the list of these agents.

One method commonly employed in testing the value of any chemical substance as a disinfectant is to expose organisms dried upon bits of silk thread to its action for different lengths of time, and then, after removing and carefully washing the threads in alcohol, to place them in nutrient media at a favorable temperature and notice if any growths result from them. If no growth appears, the disinfection was presumably successful. Another common method is to mix fluid cultures of organisms with the disinfectant, and after different intervals of time, a portion is taken from the mixture and placed in nutrient media just as in the other method.

Now, in both of these methods it is easy to see that unless special precautions are taken, a minute portion of sublimate may be carried along with the thread or drop into the medium which is to determine whether or not, the organisms on the the thread or in the drop, still possess the power of growth. For organisms in their normal condition, that is, those which have never been exposed to the action of a disinfectant — the amount necessary to restrain growth of certain disinfecting agents, is very small indeed; and for those organisms which have previously been exposed for a time to such agents, Geppert shows is very much less. In case of the organism we are considering, Dr. Abbott finds the amount of sublimate necessary to prevent the growth of perfectly normal staphylococci, to be one part of sublimate in 75,000 of the ordinary peptone bouillon, or 200,000 parts of bouillon without peptones. So that, if organisms which have been once exposed to stronger solutions of this salt (1–1000) require less than these amounts to inhibit their growth, it is plain that special precautions must be taken to prevent transportation of a minute trace into the nutrient medium which is to demonstrate whether or not the organisms are capable of development.

The author gives in detail the series of experiments, and draws the following conclusions:

That, under the most favorable conditions, a given amount of sublimate has the property of rendering inert only a certain number of individual organisms — that is to say, the process is a definite chemical one taking place between the protoplasm of the bacteria and the sublimate in the solution.

The disinfecting activity of the sublimate against organisms is profoundly influenced by the proportion of albuminous material contained in the medium in which the bacteria are present. It was found that the relation between the golden pyogenic staphylococci and sublimate is not a constant one. Organisms from different sources and of different ages behaving differently when exposed to the same amount of the disinfectant for the same length of time.

Many of the results of previous experimenters, who have assigned to corrosive sublimate more powerful disinfecting properties against the staphylococcus pyogenes aureus in cultures, than the observations reported in this paper indicate, are attributable to the neglect of certain precautions now recognized as essential to the proper conduct of such experiments.

At the present stage of our knowledge in this direction, it is plain that for use in surgical practice, the solutions of corrosive sublimate do not possess all the advantages hitherto attributed to them.

In regard to the employment of sublimate solutions upon wound surfaces, it is plain that there exist at least two serious objections; first, the albumen of the tissues and fluids of the body tends to diminish the strength of, or, indeed, renders entirely inert the solution employed; and, second, the integrity of the tissues is materially injured by the application of this salt. The first objection cannot be met with certainty, for the surgeon possesses no means by which he can determine the amount of albuminous material with which his solutions are to come in contact, and in any case this large amount of albuminous material is an almost inseparable obstacle to complete disinfection with sublimate. He is, therefore, never in a position to say, *à priori*, that his efforts at disinfection of the wound are, or are not, successful.

During the past two years we have had sufficient evidence to lead us to believe that the normal tissues and fluids of the body possess the power of rendering inert many kinds of organisms which may have gained access to them. This function is therefore diminished, or, indeed, may be quite destroyed, by any agent which brings about alterations in the constitution of these tissues. We know that just such changes as those to which we refer are known to follow the application of sublimate solutions. It is plain, then, if we bring

[16] Johns Hopkins Bulletins, No. 12, 1891.

about in these tissues a condition of superficial necrosis — the condition following upon the application of sublimate — they are much less able to resist the inroads of infectious organisms than they would have been had they been left in their natural condition.

As a disinfectant, in the strict sense of the word, there are, perhaps, few substances which possess the property in a higher degree than does corrosive sublimate, but, at the same time, there is nothing which is employed for this purpose that requires greater care in its manipulation, in order to obtain its best results, than does this salt. In practice, its action is influenced by a number of conditions which it is difficult, if not quite impossible, to control.

For these reasons we seem hardly justified in continuing to give to it the first place in the list of substances which may be employed practically for the purpose of rendering harmless, materials containing the germs of infectious maladies.

METHODICAL EMPLOYMENT OF SULPHONAL IN MENTAL DISEASES.[15]

Dr. Forster publishes his medical experience with fifty-six patients of the Konigsmutter Institution and he was much pleased with the result. The drug acted principally as a motor depressant, noisy, obstreperous patients were quieted; many who were given to soiling themselves ceased to do so. This condition of restfulness was induced in excitement stages of acute and chronic insanity, periodical and chronic mania, senile dementia, progressive paralysis, idiocy, epilepsy. Thirty grains were generally sufficient, but as much as sixty were sometimes given. A single dose was from seven and a half to fifteen grains; in periodical excitement, given continuously, it shortened and ameliorated the period of excitement; and it was of special value in cases of acute melancholia and insanity. Epileptic attacks were not so violent; a cure of epilepsy was not achieved.

He observed two forms of by-effects, called by him sulphonalismus, the first was a motor and sensory depressive form, but appeared as paretic weakness, at first, of the lower extremities, then of the tongue and upper extremities. The other form was a persistent somnolency and a diminution of sensation, weakening, or extinction of the cutaneous sensibility. The first stage of this was not dangerous, but the second required careful observation. The symptoms disappeared quickly on reduction of the dose of sulphonal. The pulse was generally regular and strong. Neither respiration nor the uro-genital system was injuriously affected. Disturbances of the digestive tract were, however, observed twice with an exanthem. Tolerance of the drug was never observed, so that, unlike morphine, it can be discontinued at any time.

TOXIC DOSE OF OIL OF TURPENTINE.[16]

The daughter of a former Hawaiian missionary states that the natives of the Islands are so fond of drink that the native house-painters will drink oil of turpentine for its intoxicating effect when they are unable to obtain any other stimulant. They have been known to drink as much as a pint at a time. From this statement it would appear that the toxic dose of this substance is far beyond any dose dreamed of by therapeutists.

[15] Medical Press, 1891, No. 2730.
[16] New York Medical Journal, 1891, 28.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

Regular Meeting, Monday, October 12, 1891, the President, Dr. Frederick I. Knight, in the chair.

Dr. E. G. Cutler reported

SOME CASES OF GASTRIC DILATATION.[1]

Dr. F. C. Shattuck: The interesting cases so well reported by Dr. Cutler certainly justify his statement that gastric dilatation is not recognized as often in these parts and as early as it should be. The important fact is also brought into prominence, that extreme dilatation very frequently does exist without the copious vomitings supposed to be more or less characteristic of the condition before the stomach-tube came into general use, even without vomiting at all. One of the cases, that seen with Dr. Boland, was seen by me a year before he consulted Dr. Cutler. His stomach must have been dilated at that time but I did not detect it for some reason or other. The soft stomach-tube renders a diagnosis possible in many cases in which, without its use, an accurate diagnosis could not be made; and, for treatment, the tube is indispensable. There is much that is disappointing in the results of a vast deal of work devoted to the stomach and its diseases of late years and the chemical examination of the gastric contents has not yet borne the fruit which was hoped for. But the diagnosis and treatment of dilatation has been enormously furthered.

In one of the cases reported, a long interval elapsed between the ingestion and the expulsion of a certain article of diet. In one of the first cases of this condition which came under my observation, the dilatation was very marked and gastric peristalsis was visible through the abdominal wall; the presumable cause was hypertrophic stenosis of the pylorus. She would never consent to the use of the tube and by very careful diet and rest alone great improvement was gradually seen. She became so comfortable that she indulged in canned corn, a considerable quantity of which was vomited a fortnight later quite unchanged.

In another case of great dilatation with visible peristalsis a much longer interval elapsed. She was under my care two years ago at the Massachusetts Hospital and my attention was called to some peculiar looking masses in the washings of the stomach the first time the treatment was instituted. Careful examination showed these fragments to be pear-skins and it was found that nothing of the kind had been swallowed for upwards of four weeks, when she did eat one pear. Pieces continued to come away with almost every washing until the forty-sixth day after the pear was eaten when the last was obtained. This case was of great interest etiologically. She had suffered from attacks of bilious colic for many years and during 1887 and 1888 was laid up for many months by a succession of abscesses discharging outward over the site of the gall-bladder, but finally healing completely. Her stomach symptoms dated from this time and there can be but little question that pyloric or duodenal stenosis was caused by the cicatrix of the ulceration set up by gall-stones. The usual gain in comfort and strength followed lavage and diet and has been maintained up to the present time.

[1] See page 585 of the Journal.

In these cases of dilatation following stenosis the dilatation may be notably diminished by appropriate treatment, although the essential cause persists. Lavage enables us to prevent the distending forces of large fluid accumulation and gaseous decomposition; and the wall of the living stomach is not quite like a rubber band which, when once overstretched, is incapable of repair. I have encountered one or two cases in which it was impossible to satisfactorily inflate the stomach, presumably because the pylorus failed to contract and the air could thus pass freely into the intestines. I should be glad to hear whether Dr. Cutler has also seen such cases, and, finally, should like to endorse to the full all that he has said in his important paper.

DR. A. L. MASON: I have little to add to what has been already said. I have been much interested in Dr. Cutler's cases, and think he is to be congratulated on the successful result of treatment. At the City Hospital I have seen a few cases of dilated stomach, less in extent than those Dr. Cutler has reported, and the treatment by washing out has been brief. The patients have disappeared, and I have been at a loss to know how far it was remedial. It seems to me that where such enormous dilatation exists, due to an atonic state of the muscle, the condition must probably recur soon after the patients escape notice or stop treatment, and I would like to ask Dr. Cutler whether his patients have been able to continue the treatment at home.

DR. CUTLER: One of these cases passed the tube the second time, remained at the hospital a few days, went home and has been using it ever since. Another patient, the plumber, has been using it every three or four days for over a year himself. When he feels pretty well he leaves it off, taking it up again when the symptoms get rather bad. I have one patient who has been following up the treatment more or less regularly for four or five years.

DR. MASON: That seems to be a sufficient length of time in that particular case, but the treatment is rather recent, and I suppose the dilatation occurs as a rule in rather feeble persons, debilitated more or less, at middle age perhaps, and, of course, curative results cannot be altogether expected, especially as in many instances there may be some form of organic stenosis. However, that does not make the condition any the less interesting, or the result of treatment less satisfactory.

I would ask Dr. Cutler also, whether he has seen any dangerous symptoms or any great difficulty in passing the tube, because I was present in one instance where suffocation seemed imminent from the regurgitation of fluid around the tube into the trachea, so that the tube had to be withdrawn. It was in a feeble person who may have had malignant disease, but the condition seemed dangerous.

DR. J. C. WHITE: Will Dr. Cutler explain the significance of his remarks, in connection with two or three cases, with regard to the quantity of hydrochloric acid present. To one ignorant of the subject it did not convey anything. I would like to ask whether it was normal or abnormal.

DR. ABBOTT said, he would like to ask whether the process of washing out the stomach, in all its details, is entirely free from danger. Recent severe accidents from the injection of water into the intestines for the purpose of overcoming intussusception, — such as rupture of the bowel, and in some instances cracking of the mucous membrane without complete perforation, — suggest the importance of extreme caution in washing out the stomach to avoid the occurrence of similar accidents. It would seem that the quantity of water employed, as well as the height from which it is poured, should be points carefully to be considered in these cases.

DR. BROUGHTON: I think Dr. Cutler did not allude to the etiology of the cases.

DR. FITZ: I remember seeing one of Dr. Cutler's cases, a case of distension visible to the naked eye, and the muscular contractions excited by tapping on the stomach could be seen. In reference to the subject in general, I have nothing to say.

DR. F. C. SHATTUCK: I would like to ask Dr. Cutler whether he has encountered any cases in which it was impossible to inflate the stomach, owing to insufficiency of the pylorus, the gas passing directly onward into the intestine; and if so, how common they are.

DR. E. G. CUTLER: I recall that once. I do not remember ever seeing it at any other time.

In reference to Dr. Mason's remark in regard to the age of these people, it so happens that almost all my cases were young. One, I believe, was forty-six years of age.

With regard to the prognosis, I take it for granted that it depends upon the underlying cause. If this be a cicatricial stenosis, it is not going to be removed by washing out the stomach. The condition will persist until the patient dies, or until either the Loretto operation is performed and the patient dies from that, or until some other operative interference, as an anastomosis between the stomach and intestine or some such thing, is performed. The mortality from such operations is so great at the present time that it seems inadvisable to do anything of that sort unless forced to; and the person usually is very comfortable, gets along very well with the washing treatment, and there are cases on record where washing has been done for a large number of years with the greatest success. It is a nuisance, of course, to put a stomach-tube down the throat occasionally and wash out the stomach, but that is about all.

With reference to the dangers or difficulties in passing the tube, I have read of them, but never saw anything of the kind whatsoever. It has always been my habit to select a tube suitable to the patient, just as I would not undertake to put a number-six shoe on a number-twelve foot. Usually I have taken rather a smallish tube. I have had the patients vomit now and again, not very frequently, but I never saw any difficulty whatever. Occasionally the patient does vomit several times (two or three); but if you instruct him, — at least it has been my experience, that if you hold the rod of authority over him, and tell him how to breathe and act and hold his head, and put the tube not too far down so as to irritate the stomach, it has been my good fortune thus far to be rather free from attacks of vomiting. When you first start off, the patient is very apt to vomit once if there is a very considerable amount of dilatation, because he has got too large a quantity of stuff in him and the slightest irritation is apt to set it a-going. But I have seen no danger from it. I have, however, seen a great deal of discomfort arising from the irritating character of the vomitus on the tongue, mouth, lips and the oeso-

phagus, from the long continuance of the œsophageal or the stomach-tube in its place, so that this nasty stuff has been enabled to act some little time on the parts. It is rather more frequently the case, if you are too long at the first washing, to have a good deal of soreness as the result. That is the only discomfort I have ever seen.

With regard to the presence of hydrochloric acid in the gastric juice, in the healthy stomach after digestion has been fairly established it is a normal thing to have a certain amount of free hydrochloric acid. There are certain conditions in which it is not found, and those are cases where the pyloric end is diseased to such an extent that many of the peptic glands have undergone degeneration or there has been loss of substance from ulceration or new growth of new tissue in that place. Then, too, in certain cases of catarrh where the condition is very marked, there is also at the same time a diminution in the secretion from several causes, and there is like to be in cases of chronic catarrh a great deal of interstitial inflammation, that is to say, connective tissue formation between the groups of tubules so that many of them are squeezed and distorted and have not the power to produce the proper secretion — a condition analogous to that which occurs in interstitial disease of the kidney.

So far as danger is concerned, I have never seen any at all from the passage of the stomach-tube. Recently hæmorrhage is regarded as a contraindication for the use of any such local means as this, chiefly for the reason that rest of course is the thing always desirable in the case of a recent ulceration or one which is deeper.

As far as the hydrostatic pressure is concerned, the only thing to do is to let the water run in, and if you hold the tube just above the level of the stomach, as is usually done, it runs in very readily and there is no more lateral expansive force than there is from the secretion which is already there. It is ordinarily the custom to pass the tube down into the stomach and pour in the water from a height so that it will just run in and no more, and there is no danger of getting too much pressure if you do not get too much water. If you fill the patient up too full, he simply nods his head and regurgitates and up it comes. I do not think it is a wise thing to see how much fluid one can get into the stomach; it is useless. If there is evidence that the stomach is not able to pass on the food as it should, it is of no sort of use whether you can get in one quart of water or a dozen. You simply want to wash the stomach clean, and having done that, that is all you care for.

As far as the distension of the stomach with air is concerned, the best way is to follow out the method which has been used in some of the foreign clinics for a number of years; that is, to blow up with air by means of a Davidson syringe through the tube. In that way you put in at each squeezing of the bulb, the bulk of two ounces of air and can control it instantly. If the patient suffers pain, you simply withdraw the nozzle of the syringe and let some air out, so that it is not under pressure. It is found that a relatively small amount of air is necessary to start up the process of contraction and bring the folds of the stomach in relief so that you can see them. You can pump in a considerable amount, but that is not a wise thing any more than you would wish to over-distend a man's bladder with water to see how much it will possibly contain. There is no likelihood for this to happen except in demonstration before classes of students where sometimes inadvertently one might get in more than one desires.

As far as the etiology of the diseased condition is concerned, that is manifold. There are quite a number of different conditions which bring it about, but it was not within the province of this paper to speak of them. It was only the condition of dilatation after it existed that I wished to discuss. It does not make any difference whether the dilatation is the result of cicatricial stenosis or cancerous stenosis or pressure of tumor outside or what not, the treatment at first is the same, and the conditions which enable you to make out the diagnosis is the same. You can make the patient comfortable; you can fix him so that he can do his work; and you can make his life endurable. It was not so before, and he was removed from a great many of the pleasures of life which this simple method of procedure — and it always seemed to me a harmless one — will give him.

Dr. E. H. Bradford reported a case of

ANEURISM OF THE EXTERNAL ILIAC ARTERY.[1]

Dr. G. W. Gay: Those who have had much to do with aneurisms will agree with me when I say the diagnosis is not always easy to make out. I have made my share of mistakes in this department as I suppose every surgeon has who has had much to do with a large number of persons in the hospital. It was once my ill fortune to explore a trouble in the anterior mediastinum, which some of our best clinicians thought was not an aneurism. The exploring needle was first used, and the evidence not being conclusive a small incision was made just above the clavicle, and that on being dilated proved that it was an aneurism. The exploration was made after several paroxysms of dyspnœa which seemed to threaten his life, and it was a question whether it was an abscess there or something else. It proved to be an aneurism without any of the ordinary signs or symptoms of aneurism.

Again, a man came under my care with a large tumor in the axilla. The arm had been amputated several years before for a gunshot wound. There was no pulsation whatever. It was a lobulated tumor, elastic, painless, and had been in existence about two years. It was thought to be sarcoma. An incison into it gave exit to a little brownish, coffee-colored fluid. On exploring the interior of this sac a little more thoroughly, a stringy mass of lymph was found at the bottom. On examining that a little more carefully red blood came, and the diagnosis was made. The subclavian artery was tied and the man got well, and is well to-day. With the arm missing, I do not see how it would have been possible to determine the diagnosis in that case without an exploratory incision.

I once saw one of the best surgeons this city has ever produced amputate a thigh for an aneurism of the popliteal space, which was only discovered after the operation. There were absolutely no symptoms pointing to that disease.

A darky once came to the hospital with a swelling of the popliteal space, which was precisely like that which was described, and which existed in Dr. Bradford's patient, a large, hard, brawny, non-pulsating tumor which had been there for a long time. Whether the vessels pulsated below I do not remember. That tumor was aspirated and found to contain blood. Noth-

[1] See page 593 of the Journal.

ing more was done for two weeks, when pulsation appeared, owing to the patient being put to bed, kept quiet, his limb elevated and the congestion and diffusion around the aneurism being allowed to subside. Then the diagnosis was clear. The femoral was tied, the patient got well, went out, and returned after three months with gangrene of half of the leg to the knee. The leg was amputated, and the man got well.

All these cases show that the diagnosis of aneurism is not so simple as we have been led to suppose.

DR. F. B. HARRINGTON: I would like to ask Dr. Bradford whether in a case similar to his, with the knowledge that he was dealing with an aneurism, it would not be justifiable to make an effort to tie the common iliac, not knowing the obstacles you are going to meet.

DR. BRADFORD: It would anatomically have been feasible I think, but clinically the possibility in this individual case seems questionable.

DR. HARRINGTON: Whether one ought to leave such a case without making an attempt, not knowing how short a space one had to tie, is the point I wish to settle in my mind.

DR. GAY: I think one important point in these cases is the pulsation of the arteries below. I do not know what the condition of the arteries was in Dr. Bradford's case. I think in one of my cases that fact was overlooked, and that fact is forcibly brought to mind by a case I recently saw. A man was kicked in the leg, his leg hitting against a spike striking over the femoral artery. The story given to me was that the man had fainted away after the kick, had several attacks of sharp acute pain sufficient to make him faint and had a distinct enlargement after each attack. I thought that the femoral was ruptured, and that the reappearance of the hæmorrhage accounted for the pain. The only thing against that was the fact that the arteries below this bunch were intact. The anterior and posterior tibial could be felt distinctly. The tumor was opened, the blood turned out and it was found to be simply rupture of the small vessels not the large ones. If I had found the arteries below were not pulsating I should have expected to find rupture of the femoral artery. I think that is an important point in the diagnosis of these cases.

DR. M. H. RICHARDSON: I think the subject is very important, and I am very glad to hear Dr. Bradford's paper and Dr. Gay's remarks on the subject. I never have been so placed, but dare say I shall be. I have had a very slight experience with aneurism. I have been in the habit of exploring tumors in regions which are commonly the seat of aneurism with a very fine needle even in the absence of any signs of aneurismal dilatation, but I think even in the preliminary exploration that we cannot be sure that an aneurism is not present. I think that the case is very valuable, and I think we are indebted to Dr. Bradford for bringing it out. We certainly learn very much more by such cases than we do by successful ones.

DR. HARRINGTON: I should like to ask Dr. Bradford, given the knowledge he has, what he would do in a similar case.

DR. BRADFORD: I certainly should not have operated, if it was one of those where a more thorough examination would have perhaps made the diagnosis more clear and would have contraindicated the operation.

DR. GAY: One other case that resembles somewhat Dr. Bradford's. Dr. Edson asked me to see a woman suffering from septicæmia, who had a tumor in the pelvis of some weeks' duration. The patient was in an extreme condition of blood-poisoning. The aspirator gave exit to some bloody, stinking matter, which we supposed came from an abscess. She was etherized. This bunch was opened and found to be a suppurating hæmatocele. The external iliac was leaking and the abscess was packed with iodoform gauze. She was immediately removed to the hospital, re-etherized, the packing removed, everything cleared out, a large incision made running up above the tumor to give control of the common iliac artery if possible. On getting into the peritoneal cavity and down on the abdominal vessel it was found that the effusion extended so high that the abdominal aorta was the only possible way to get at vessels above the tumor and stop the bleeding. Then our attention was attracted to the interior of the sac, that having been thoroughly cleared out the bleeding point was readily seen, but it could not be secured. The vessel was so thoroughly surrounded and matted into this inflammatory material it was impossible to dissect it out. The forceps was applied, the abscess packed and the patient made as comfortable as possible. She died in the course of two days. I fully sympathize with Dr. Bradford that this is one of the most difficult positions a surgeon can find himself in, but he has the consolation of knowing that he is not the only one who has been in these places.

DR. BRADFORD: The ease with which the bifurcation of the aorta can be reached by stripping up the peritoneum was quite noticeable in this case.

Dr. Bradford also reported a case of

BULLET-WOUND OF THE SKULL.[3]

He had been quite interested in wondering how the bullet could have acted as it did. The butt end lay on the dura, and of course it is not possible that the bullet was in the cartridge with the butt end foremost, and it was evidently flattened out at the point of impact, that is, at the point. It is evident, though it hardly seems credible, that it could have turned so completely from the point of impact to the point in which it lay.

DR. BURRELL: It has not been my fortune to see a bullet revolve in that fashion in the skull, but I have seen that sequence of events where a bullet was fired through two boards, first through one board and impacted on the second board, here there was a direct revolution of the bullet. In the bullet-firing that I have seen, I have come to the conclusion that no one can tell where a bullet is going to bring up. It is received on a plane surface of board, and may glance in any direction, may revolve on its own axis, as in Dr. Bradford's case, or pursue a straight course.

TREPHINING FOR EPILEPSY,

by DR. E. H. BRADFORD.

Two cases of trephining for epilepsy were mentioned, and the trephine buttons were shown. In both these instances there had been a history of a fall and an injury to the head sometime before the epileptic symptoms. The exact site of the injury was not known. In one case the patient was of adult age; in the other a child of six. In the second instance the child was somewhat deficient mentally. In one instance the pain attending it was referred to a certain portion of the skull. On palpation a slight depression was

[3] See page 543 of the Journal.

felt. In the other instance, the depression was felt, but there was no pain in that region. The depression could be readily recognized on careful palpation, and was sufficiently well marked to attract a degree of attention of the surgeon searching for injury following a fall. In both these instances trephining was done with some amelioration of the the patient's symptoms. But although the depression was felt before the operation, and to be seen to a marked degree on the outer table of the trephine button, on the inner table there was no evidence whatever of any depression; demonstrating that there may be a depression of the skull noticeable on palpation externally, without a corresponding depression internally, and with no evidence in the bone of the existence of any previous injury to the bone, in other words, the specimens indicate non-traumatic dents in the outer table of the skull.

Dr. M. H. Richardson showed two specimens of

GALL-STONES REMOVED FROM THE CYSTIC DUCT.

The first specimen is a very small stone. The diagnosis was made by Drs. F. C. Shattuck and Cutler, and an operation for relief was advised, The gall-stone was impacted where these gentlemen said it was, in the cystic duct, and this stone was situated in the cystic duct of a very much contracted gall-bladder. This is the third operation on the gall-bladder I have had for gall-stones, and this illustrated the great contraction and thickening of the wall and its friable condition. If any of you have to operate on the gall-bladder, and have not had experience, you will find the gall-bladder so friable as to interfere with the success of the operation and jeopardize the patient's life.

The next case was a gentleman of sixty-four, who had been troubled eight years with biliary colic, and his life had been miserable that time. He has been abroad every year to get relief from the medicinal properties of the waters of the chief springs. He came home from Carlsbad the other day, and has required morphine injections to make him comfortable. He decided to have an operation done. In this case we found eight large gall-stones in a row in the cystic duct, and extending out into the contracted gall-bladder with its thickened, friable and bleeding walls. All that was necessary was to open the gall-bladder and remove these stones.

Both these cases have done remarkably well. The boy now, at the end of a week, is in very good condition. The second case was done Saturday morning, and the temperature is normal.

I would like to mention a case I had a year ago. A woman who had suffered many years with symptoms of biliary colic, marked jaundice and profound cholæmia: I opened the gall bladder and found it contracted, and in that case I was confronted after the removal of the stones with a formidable condition of vast quantities of bile escaping down by the foramen of Winslow.

I have two specimens of vermiform appendix in both of which cases I removed the appendix. I treated all the cases in the same way, that is, in the question of sepsis or where septic fluid had escaped into the abdominal cavity, I packed them all deeply with gauze, and in all the cases the results were most gratifying. This is nothing new, but I never had so much experience in packing deep the abdominal cavity with gauze, separating the intestines for forty-eight hours, and forming a perfectly safe exit for any septic fluid which has been forming.

In the cases of operation upon the gall-bladder, the gall-bladder had thick walls, and was very friable indeed. In this case the gall-bladder tore all to pieces, and we had the cystic duct open and the common duct, and enormous quantities of bile coming out way down in the liver. In that case I simply put a glass tube in here, placed it in position, and packed all around on both sides with gauze. I don't think it would make any difference with iodoform or any kind of gauze. A fistula immediately formed. The woman did well for six or seven weeks, although there was no diminution of the amount of bile or jaundice. At the end of that time she had septic temperature, and died from the results of a sponge which was left in at the time of the operation in spite of the usual precautions to prevent, namely, counting all the sponges before and after the operation.

In the case of the boy I tried to sew the gall-bladder to the abdominal parietes. The thing tore all to pieces in spite of all the care I could use, and finally I had no recourse except to put in a glass tube and tie around here. That did not work, so that finally I had nothing to do except to tie this gall-bladder entirely off, and pack all around with gauze, but the gall-stones which had been so impacted there, produced such a thinning of the wall that after ligature was applied, the bile escaped with great profusion, and that was provided for by the sponge and the gauze. It pleased me very much indeed that the gauze should have acted in that way.

Dr. Fitz: In these operations of Dr. Richardson, I would like to ask whether he considered the expediency of tying the cystic duct and removing the gall-bladder.

Dr. Richardson: In this case that was done.

Dr. Fitz: Still leakage took place in the case of the young man. In the other case where a fistula was made into the gall-bladder, whether such an operation commends itself to the surgeon?

Dr. Richardson: Yes, if the gall-bladder is contracted so that you cannot make a fistula easily.

Dr. Fitz: In these cases of biliary calculi it is not so much perhaps the presence of calculi in the gall-bladder at any time, but the tendency of the individual to form calculi.

Dr. Richardson: I think the difficulty is in closing the gall-bladder or in closing the duct. I think you are apt to get a fistula unless you sew something over the duct to close it.

Dr. Fitz: I have the impression that Sir Spencer Wells considered in these operations for gall-stones the thing to aim at was the removal of the gall-bladder and attempt to close the cystic duct. I do not know whether that in practice resulted favorably.

Dr. Richardson: It seems to me a more difficult and dangerous operation. If gall-stones form again, nothing is easier than to get them out. All you have to do is to make an incision through the other cut.

Dr. Fitz: I suppose surgeons have the hope of closing the fistula later?

Dr. Richardson: The fistula closes, takes care of itself.

Dr. Fitz showed a specimen of

ANEURISM OF THE AORTA,

interesting from the extent of the disease, the com-

parative freedom from inconvenience and the absence of characteristic symptoms of an aneurism. It came from a man who walked into the hospital a few days ago, suffering from a certain amount of annoyance in swallowing, especially when large mouthfuls were taken. He was not obliged to abstain from solid food. This was the only symptom of which he complained; and he appeared for a man of his years, sixty-two, in excellent condition. The difficulty in swallowing led to the suggestion of an ulcer of, or pressure upon, the œsophagus. On physical examination, there was nothing abnormal found in the circulatory apparatus. The pulsations in both radials and temporals were normal, and the arteries were not rigid. The position and sounds of the heart were normal. The resonance in both chests was also normal, perhaps a little hyperresonant. At the base of the sternum, however, there was a circumscribed dulness extending nearly to the notch, its borders defined by the edges of the sternum. No pulsations to be observed, and on palpation nothing like a thrill. No abnormal signs on auscultation of the heart or lungs nor was there any interference with respiration. With these conditions there was also a very slight degree of hoarseness, hardly sufficient to attract attention, yet, in connection with a certain amount of discomfort in swallowing, an important sign. Dr. Hooper examined the larynx and reported a paralysis of the left vocal cord. The clinical picture suggested a tumor which was interfering with the function of the left recurrent laryngeal and which also was pressing to slight degree on the œsophagus. Aneurism of the ascending portion of the arch was the most satisfactory explanation, and yet he had no severe symptoms. He walked about, ate food without especial difficulty, had no disturbance of respiration or circulation, and, during three or four days at the hospital, expressed himself as comfortable. He went out daily, and, while sitting under a tree, suddenly a gush of blood took place from the nostrils. The immediate cause of death proved to be the rupture of an aneurism into the left primary bronchus. The specimen illustrates the fact of their being no sharply-defined tumor, but a more or less uniform dilatation of the arch and of the entire thoracic aorta, also just above the diaphragm, a larger circumscribed dilatation, the wall of which was formed by two eroded dorsal vertebræ. This erosion had taken place without pain. The rupture is a little sac projecting from the generally dilated surface of the aorta. It was filled with a thrombus, but the tissues beneath that and the bronchial cavity had suddenly given way.

AMERICAN GYNECOLOGICAL SOCIETY.

SIXTEENTH ANNUAL MEETING HELD AT WASHINGTON, SEPT. 22–24, 1891.

(Continued from No. 22, page 577.)

DR. A. REEVES JACKSON, President, of Chicago, presented the

ANNUAL ADDRESS.

He reviewed the work of the Society in the past, and referred with much feeling to the recent death of Dr. Fordyce Barker, one of its founders and its first presiding officer. He had occasion also to mourn the death of Dr. David Humphrey Storer, of Boston, an honorary member, and Dr. George H. Lyman, one of the founders.

Reviewing the field of gynecology during the fifteen years since the Society was founded, he pointed out the manner in which the advocates of this or that operative procedure had become extremists. The total extirpation of the uterine appendages was a most striking instance of this tendency. He considered it a crime when simpler treatment could be adopted. He protested against the too frequent examinations of the pelvic organs of young girls and unmarried women, and condemned the practice of publishing hasty and immature reports of surgical work, which had not undergone the test of time.

DR. WM. H. BAKER, of Boston, read a paper entitled,

CANCER OF THE CERVIX UTERI — RESULTS IN ITS TREATMENT BY HIGH AMPUTATION.

The writer referred to the great importance of tracing the future history of these cases. After much labor, he was able to report the complete histories of the first series of ten cases reported in 1882. The specialist sees comparatively few cases sufficiently early to accomplish much by a radical operation because the early symptoms are not marked, and the hæmorrhage and leucorrhœa are supposed by the patient to be incident to the menopause, and also because the physician fails to recognize in many cases the importance of the condition, or else, if he does recognize the diseased condition, lacks faith in the possibility of its removal. Of the ten cases reported in 1882 as having been operated on without a death, eight were then living and well. In 1886, six of these were then living and well, or about sixty per cent. after a period of from four to eight years. At the present time, fifty per cent. of the original cases are living and well after a period of from ten to twelve years.

In a second series of cases, from 1882 to 1889, there was no recurrence of the disease in 62½ per cent. of the cases operated upon.

The writer emphasized the great necessity of thoroughly cauterizing the raw surfaces after the removal of the growth by the knife. He claims for the high amputation, as compared with hysterectomy, greater safety to the life of the patient, and longer respite from any recurrence of the disease.

His conclusions were: (1) That a thorough removal of all the disease should first be made with the scissors or scalpel, keeping well outside the infiltration, and apparently in healthy tissue. (2) That the wound should not be immediately closed, but that every portion of it should be kept under observation until entirely healed. (3) That the thorough application of the cautery is an all important factor in the success of the operation. (4) That it is often necessary to do some slight secondary operation to insure success. (5) That the cases must be under close observation for years.

In all cases of cancer of the cervix, which have not become fixed by an extension of the disease, high amputation with the application of the cautery immediately following, is the safest and best method of treatment. Vaginal hysterectomy should be reserved for cases of cancer primarily affecting the corpus uteri, or where the disease has extended to the corpus uteri without fixing the uterus.

DR. JOHN BYRNE, of Brooklyn, believed that high amputation could be as completely done with a delicate

galvano-cautery knife as with the scalpel or the scissors.

Dr. Henry J. Garrigues, of New York, read a paper on

THE BEST POSTURE IN THE DIFFERENT STAGES OF NORMAL LABOR.

A change has taken place in the customary position in which women are delivered in the United States. Now some speak of an American (dorsal) position as opposed to the English (left lateral), while until thirty years ago nearly all American obstetric authors recommended the English position.

In deciding the posture a woman should occupy during labor, we must take into consideration her comfort and safety, the child's safety, and the accoucheur's comfort, which again contributes to the mother's safety. While the child is passing through the bony part of the parturient canal the semi-recumbent position on the back is best. The contraction of voluntary muscles and gravity co-operate with the contraction of the womb; the entrance of the head into the superior strait is favored; the stethoscope can easily be applied to the abdomen; manual pressure may be exercised on the womb. Sometimes a change of position is useful.

When the vulva begins to open, the patient should be turned on the left side, and lie horizontally, her thighs at right angles with the trunk, and the legs and the lumbar region stretched. All support should be taken away from hands and feet, and chloroform should be given. In this position the os coccygis has free scope to recede backward; the genitals become visible and easily accessible, while the rest of the body remains covered, whereby exposure to cold is avoided; the patient does not see the accoucheur and has a feeling of being hidden. Abdominal pressure is limited; the fundus sinks down, so that gravitation works in a direction opposite to that of uterine contraction. The left lateral position affords a safe-guard to the perineum and prevents the head from emerging too suddenly. During and after the expulsion of the placenta, the woman should be on her back, with the head low, a position better adapted to Crede's method than the English.

The kneeling, squatting posture is fatiguing, predisposes to fainting and hæmorrhage, makes the use of the stethoscope difficult, nearly excludes any kind of protection of the perineum, and renders the use of chloroform impossible, though in cases of lingering labor it may be tried.

Dr. W. Gill Wylie read a paper on the

INFLUENCE OF IMPERFECT DEVELOPMENT AS A CAUSE OF UTERINE DISEASE.

The most important influence at work in causing uterine disease is the tendency to restrict the physical development of our females just at the time when they are changing from girls to women. The generative organs are practically dormant until about the tenth year, when they begin to develop and make a large demand on the system up to about the sixteenth year. To ensure full development during this period a girl must have a surplus of physical and nerve force. If the girl is pushed at school, or her force is used up by constant contact with older intellectual people during this period of development, she is almost certain to have a leucorrhœal discharge and dysmenorrhœa, and an imperfectly developed uterus, with disease of the glands and follicles, which predisposes her to catarrhal endometritis, the development of new growths, such as cancer or fibromata, and if marriage and pregnancy follow the labor is apt to result in laceration of the cervix, or if unmarried the catarrhal condition is pretty certain to result in sterility.

As preventatives of this condition of imperfect development the author recommended that during the period of active development the general health should be maintained, the bowels kept regular, and healthful play out of doors, and pleasing mental occupation should take the place of an in-door life, forced cramming, and stimulating contact with older people.

The imperfect development of the generative organs with their attendant conditions should not be lost sight of in treating the various diseases to which women are subject.

Dr. A. W. Johnstone, of Cincinnati, believed that if there were no infantile uteri there would be no lacerated cervices, and that quite a large per cent. of cystic ovaries and diseased tubes were due to an infantile body.

Dr. Horace T. Hanks, of New York, read a paper entitled,

SUGGESTIONS OF CERTAIN RULES TO BE FOLLOWED IN THE EFFORT TO PREVENT MURAL ABSCESSES, ABDOMINAL SINUSES, AND VENTRAL HERNIA, AFTER LAPAROTOMY.

Abscesses in the line of the abdominal incision after laparotomy tend to make a track for a later ventral hernia. In trying to avoid mural abscess we should make a clean-cut wound, separating the different layers carefully; do not retract the lips with too much force or too long pressure; do not use too hot water or too strong a germicide on the lips; have the abdomen aseptic by means of a germicidic dressing some hours before the operation. Do an aseptic operation. Remove the dressing every second day. Before cutting the sutures have the patient wear a moist bichloride dressing two or more hours, and be sure no sepsis in any way whatever is taken into the wound when the sutures are withdrawn. Make no unnecessary punctures with needles; do not strangulate the wound with too tight tying of the deep sutures.

To avoid sinuses: Never use a drainage-tube when not necessary; never allow a tube to remain *in situ* more than twenty hours; keep the tube sweet and clean.

Ventral hernia is much more frequent than is generally supposed. The author believed it could be prevented by a more careful apposition of the different layers of peritoneum muscles and fascia, taking care not to strangulate the deeper tissues by suturing too tightly. He used silkworm gut sutures.

Dr. Emmet believed the silver-wire suture should be used in preference to all others because it enabled a more perfect coaptation of the edges of the wound. If the silk suture was used it was likely to have the effect of doubling the abdominal wall on itself, and producing a union between the peritoneum and the skin, which he believed was a frequent cause of hernia in these cases.

Dr. Byford believed two important causes to be sepsis and dead material in the wound. In operating for half an hour there is apt to be a certain amount of lacerating of the fatty tissue around the edges of the wound, and in order to get perfect union a certain

amount of this wounded fat must be cut away, otherwise it is dead tissue. The worst abscesses he had met with were in cases where he had used buried sutures. He preferred the silkworm-gut suture, introducing it with a curved needle, the suture describing a circle and preventing the peritoneum from pushing up into the wound.

DR. W. GILL WYLIE recognized the fact that below the umbilicus the peritoneum is a loose tissue with little strength, which must be cleanly cut without tearing it. The recti muscles are longitudinal muscles, and their transverse strength, excluding their fascial covering, amounts to little. In opening the abdomen, he would avoid that point and open in the linea alba. It was of vital importance to get perfect union of the deep fascia.

DR. ANDREW F. CURRIER, of New York, read a paper entitled,

A STUDY RELATIVE TO THE FUNCTIONS OF THE REPRODUCTIVE APPARATUS IN AMERICAN AND INDIAN WOMEN.

The facts contained in the paper were obtained through the Indian Bureau, to the officers of which the author acknowledged his obligation. Among most tribes puberty was reached at an average age of about fifteen years. Savage life *per se*, neither hastens nor retards puberty, but climate, occupation, and hereditary tendency are the important factors. The hardships of savage life do not usually interfere with the regular recurrence of menstruation. Excessive menstruation is practically unknown. There are, however, occasional instances of dysmenorrhœa or amenorrhœa in connection with disease or deformity of the pelvic organs. The nervous and vascular disturbances which so commonly accompany the menopause in civilized women are notably absent. The duration of the menopause varies as greatly as it does in civilized life; the exposure and physical suffering incidental to a savage life does not tend to shorten the menstrual and child-bearing periods. Marriage is mainly a matter of convenience or inclination with nothing especially binding about it. It is consumated in many cases almost as soon as puberty is reached. Conception and gestation are favored by an ardent sexual appetite and out-of-door life. Abortion seldom occurs as the result of severe labor, but is common enough as the result of syphilis and criminal interference, the latter of which is fearfully prevalent.

Parturition is usually a natural and easy process, it having been described as being about as easy as for a cow to have a calf. The favorite position during labor is the kneeling one, the arms, chest and head resting upon a support of some kind. The accidents of parturition are few, occurring perhaps as frequently as in the lower animals. Puerperal disease is almost unknown; malignant disease of the generative organs is likewise seldom met with. Both local and constitutional forms of venereal disease abound. The frequency of syphilis coupled with the great mortality among infants, and the great prevalence of glandular and pulmonary disease among many of those who survive infancy, are evidences of the inroads which venereal disease has made upon Indian vitality.

Conclusions: Indian women in the savage state undergo less physical suffering in connection with the reproductive apparatus than do civilized women for three reasons: (1) natural or racial insensitiveness, compared with the far more sensitive Caucasian; (2) abundance of exercise; (3) life in the open air.

Civilized life with its complex conditions will always present obstacles to the performance of the functions peculiar to women with the same ease with which they are experienced by savages; and when Indian women exchange the savage for the civilized state, it is found they also become subject to some of the ills which are inseparable from the latter.

PROF. F. WINCKEL, of Munich, presented a paper (read by Dr. J. C. Reeve) entitled,

THE TREATMENT OF EXTRA-UTERINE PREGNANCY.

Most publications of the present day upon the treatment of extra-uterine pregnancy are either on the electrical destruction of the fœtus, or laparotomy for the removal of the amniotic sac and its contents.

The method of injecting morphine into the amniotic sac, which the writer has taught for over a decade, has been lost sight of in the overstrained estimate of laparotomy, which continues to be the favorite method. He, however, believes it to be good practice in many cases, and has recently cured two cases, destroying the fœtus in each, the patients recovering.

There is no question that the inflammation of the pelvic organs preceding extra-uterine pregnancy may naturally enough continue after the death of the fœtus, and may be the cause of many complaints, but that the presence of the dead fœtus is the cause of these symptoms cannot be regarded as proven.

The writer related a case of a ten months' tubal pregnancy, where laparotomy was performed, child and placenta extracted, tubal sac mopped out with iodoform gauze and sewed up. Patient perfectly well when discharged, and shortly afterward menstruation appeared. This was undoubtedly a case where laparotomy was the only rational treatment. The necessity of laparotomy in certain cases of extra-uterine pregnancy was proven by the writer twenty-seven years ago, when he did his first laparotomy; but his experience has taught him that it is not necessary to operate in the first few months of extra-uterine pregnancy, but to treat such cases by injection of morphine into the amniotic sac, which is easier and better. The woman is not mutilated, she has both ovaries and tubes remaining, and even the possibility of the tube which formerly was impregnated, after resorption, again performing its functions. If, after the death of the fœtus by morphine, the patient complains of great physical suffering, then a laparotomy is still possible, and the operation even then is less dangerous.

The injection of morphine into the amniotic sac can be made by any practising physician; the extirpation of the sac by laparotomy cannot be successfully made except by a skilled operator.

(To be continued.)

DETERMINATION OF SUGAR IN DIABETIC URINE BY THE MUSCIMETRIC METHOD. — The following is from the *American Druggist*: — Prepare a one per cent. solution of grape sugar in healthy urine, pour it on a soup plate; on another plate pour an equal volume of the diabetic urine; evaporate both to a syrupy consistence, then expose both plates in a place where there are flies. After ten or fifteen minutes count the flies on each plate, divide the number on the diabetic urine by the number on the grape sugar solution, which will give the percentage.

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NEW RESEARCHES ON VARIOLA VACCINE.

UNDER the above title an editorial article appeared in this JOURNAL, January 22, 1891. Some interesting experiments by Haccius and Eternod, of Geneva, were there recorded, the ultimatum of which was that the identity of small-pox and the vaccine disease was rendered more than probable. Chauveau, Chief of the Lyonese Commission, which, in 1865, announced as the result of careful studies and experimentation conclusions since then generally accepted by the profession, has reviewed the communication of Haccius and his colleague, having repeated with some of their lymph their experiments. The lymph was the product of the eighth transmission from heifer to heifer, and was furnished directly to Chauveau by the Genevan professors. Chauveau's trials were made exclusively on subjects of the bovine species. The primary eruption which follows the inoculation constantly maintains special characters which differentiate it from the vaccinal eruption. At the same time, this special eruption is the result of an infection which has close relations with vaccine, for it is no longer possible to *vaccinate* animals thus *variolized*. M. Chauveau finds no evidence of that transformation of small-pox into the vaccine disease which the Genevan professors claim to have effected by passing their lymph through a succession of cattle, the original virus being variolic. The very full account which he gives of his experiments seems to prove his contention that the lymph which he received from Eternod and Haccius was variolic lymph and not vaccine, always producing, when inoculated in healthy cows, a typical variolic eruption. It was a repetition of experiments which, as one of the members of the famous Lyon's Commission, he had performed nearly forty years ago.

Without taking up space by presenting a more lengthy summary of M. Chauveau's paper, which is printed in full in the Reports of the Academy of Medicine and in other French journals, we will state his conclusions: (1) Vaccine virus never gives small-pox to man. (2) Variolic virus never gives vaccine to the cow or horse. (3) Vaccine is not even *attenuated small pox*, and cannot be compared to the benign anthracoid infection which is communicated to animals by inoculation with *attenuated anthracoid virus*. (4) If vaccine is a derivative of small-pox it is by reason of a *radical transformation* of the variolic virus, a transformation thus far unattainable by experimenters. (5) These last propositions lead to another more general proposition, which is this: the *attenuation* of virus is not a physical process which can be identified with the *transformation* of virus.

This being granted, how, it may be asked, does vaccine virus confer immunity from small-pox?

If we do not know exactly the mechanism of this immunity, the essential cause on which it depends is well known. On reviewing all the systems of preventive inoculation, we come upon three methods which may be treated under the following heads:

(*a*) Fabrication of prophylactic substances by pathogenic agents outside of the organism to be rendered immune, and the introduction into this organism of the said substances in sufficient quantity to confer immunity, these substances having been, by the proper manipulations, freed from the virulent elements properly so called, and rendered inoffensive.

(*b*) Fabrication in the organism to be protected of prophylactic substances by the pathogenic agents, with the germs of which inoculation has been made under conditions which ensure the benignity of their infectious effects.

(*c*) Fabrication of the vaccinal substance by a virus very like the virus against which immunity is sought, but belonging to another species.

In this latter category, Chauveau places the microbe of chicken-cholera in its function of conferring immunity against charbon. Here, also, he would put the virus employed as a preservative from small-pox. Whatever, in fact, may be the origin of vaccine, though we were to admit it to be a derivative of small-pox, it none the less constitutes in reality a morbid species distinct from the latter. The two viruses, vaccinal and variolic, are irreducible into one and the same infectious entity.

It is probable that for some time to come the above will be "the last word" on the subject. Satisfactory experiments of this kind are difficult of performance, for no experimentation on animals can be regarded as complete whose results have not been checked by inoculations practised on the human subject. Now, Haccius and Eternod did not try their lymph — rendered vaccinal, as they believed, by several removes — on the unvaccinated child, nor did Chauveau make any such trials. Of course, there is an obvious reason why such experiments cannot well be attempted, and it would be nothing less than criminal to inoculate a human being with a virus which might possibly be variolic and a means of death.

The human race has not yet reached that stage of perfection described by Bulwer in his posthumous

novel; when, in his underground Utopia, it was considered lawful to sacrifice almost any number of human beings in the interest of science.

Nevertheless, if we may not for many years to come know more about the relations which exist between vaccine and variola, enough data have been obtained to establish the fact that vaccine does protect, and we are daily learning more about the vexed question of immunity.

THE DUTY OF PHYSICIANS TO REPORT CASES OF TYPHOID FEVER.

IT is well known that many physicians neglect altogether to report to Boards of Health those cases of typhoid fever which come under their care. This neglect is defended by some upon the ground that such reporting can do no good; by others, because their patients dislike to be "reported," and because if they are reported they will henceforward refuse to employ them. Unquestionably it is unpleasant for a household to be "reported" to an official body and to become an object of investigation. Doubtless the visits of the inspectors, who may sometimes be of a political, rather than a scientific, character; their prying into the plumbing, and their apparently irrelevant and even impudent questions about milkman and drinking-water, do appear to the household afflicted with typhoid fever as at least an interference, and sometimes as irreverent when, for example, the household regards the disease as an inscrutable affliction of divine Providence.

And yet, neither of these reasons for the neglect can justify it. If it is the duty of the attending physician to report any specified disease, it is as much his duty to report his cases of typhoid fever as it is those of small-pox or scarlet fever.

The Lowell Board of Health, which enjoys an excellent reputation among the boards of Massachusetts, having long suffered, as most boards of health do suffer, from the neglect of physicians in regard to reporting typhoid fever cases, has at length taken a decided stand, which is worthy of commendation, and have issued the following circular to the physicians of that city:

GENTLEMEN: — The City of Lowell has for many years suffered severely from typhoid fever, and to such an extent in the later months of 1890, that the best expert assistance was called to make a thorough and exhaustive investigation, which was done at a considerable expense.

In 1888 there were 63 deaths from typhoid fever; in 1889, 65 deaths; in 1890, 173 deaths; in 1891 to November 1, 63 deaths. Cases reported in 1890, 454; in 1891 to November 1, 238.

The Lowell Board of Health, in April, 1888, under the authority of the Public Statutes, chapter 80, section 18, — "The Board shall make such regulations as it judges necessary for the public health and safety. Whoever violates any such regulation shall forfeit a sum not exceeding one hundred dollars," — included typhoid fever in the list of diseases considered dangerous to the public health, and required physicians to report them to the Board.

Rule 2. The Board consider that varioloid, membranous croup, measles and *typhoid fever* are diseases dangerous to the public health, and require immediate notification of their existence.

They have been aware since then that typhoid fever has not been reported by physicians with the same promptness and regularity as are the more contagious diseases, diphtheria and scarlet fever.

In the report of 1888 it was remarked, "Physicians who have not given the matter thought often ask what benefit is derived from reporting typhoid fever to the Board of Health, since there is no need of isolation or fumigation." While typhoid fever is most frequently introduced into the system by contamination of drinking-water with its germs, it may be introduced by direct contact with the patient and his discharges. Circulars relative to typhoid fever are sent to every householder where a case exists; disinfection of the dejecta, advised in this circular, may save the occurrence of a second case of the disease. An inspection of the premises may discover the source of the disease, or prevent the contamination of the water-supply of other families.

The fact that there frequently are unsanitary surroundings in typhoid fever which can be remedied is a strong reason why this disease should be reported to the Board of Health. The Board is aware that the percentage of deaths to reported cases is very much larger than it should be, and appearing in the reports of the Board, is examined and criticised as reliable statistics, when it is very incorrect and misleading. Even if nothing were gained by reporting the disease, other than an opportunity to make a scientific investigation as to the causes of the malady, then it should be reported.

It seems as if some physicians were interested in disease wholly from a financial point of view, and the neglect we complain of is constantly growing worse instead of better. The physician who reports typhoid fever at present is the exception, and not the rule.

There were seven deaths in October, 1891, from typhoid fever, and but one reported to the Board of Health either before or after death.

As these deaths were not reported to the Board, notwithstanding the oft-repeated requests that the disease should be reported, they are strongly and unanimously of the opinion that more stringent measures are absolutely necessary, and they have, therefore, voted the following resolution:

"On and after December, 1891, upon the presentation of a death certificate at the office of the Board of Health, the person having died of typhoid fever, in the absence of a previous report of the disease by the attending physician, a warrant will be asked, and if granted, a prosecution will be commenced by the Board in each and every case."

It must not be supposed that the physicians in Lowell are sinners above all the physicians of Massachusetts. The fact probably is, that they fairly represent, in this respect, the profession throughout all of the cities of the State. But as we have already intimated, this neglect is not only indefensible, but it is also discreditable to the profession, and the Lowell Board of Health is to be warmly commended for what it has done.

The medical profession makes many gratuitous sacrifices of time, skill and trouble for the public good — many sacrifices which often are not recognized and not appreciated by the public for whose good they are made. As a rule, these sacrifices are made cheerfully. To them should, and must be added the diligent reporting of required diseases to the local boards of health. It is emphatically the duty of our profession to set an example of obedience to sanitary authorities.

CUTTING AND SUBSTITUTING.

THE American public is proverbially addicted to the habit of dosing itself. Whether this fact is the cause or the effect of the vast quantity of proprietary medicines with which the country is flooded we shall not discuss, but the result is everywhere felt by the apothecary; he must keep a supply of what is demanded of

him by his customers. This in itself is bad enough, but in addition he finds that many of the favorite nostrums are sold at cut rates by large retail firms, which exist in every city and sell everything from dry-goods to crockery and tea. For some time the different pharmaceutical societies and journals have been discussing different plans by which a profit might be made on these compounds, and various agreements have been made with the proprietary manufacturers, prominent among the plans being one by which a rebate is to be given to all retailers who sell at the regular prices.

Recently another question has received much attention. This is a fancied grievance on the part of the manufacturers that the druggists are in the habit of advising customers who ask for some particular brand of medicine to take a similar compound of their own manufacture, thereby saving money for both the apothecary and the patient. A statement that this was being largely done all over the country has found its way into many daily papers, apparently through the efforts of a hustling western advertising agent. The arguments advanced against this practice are in a certain way unique. They are, in short, that if a manufacturer of a patent medicine creates a demand for his compound by extensive advertising, it is against good business morals for any one by word or deed to do anything which shall injure his business; that is, no apothecary — we do not know whether this is meant to apply also to physicians — should advise his clients to abstain from swallowing a mixture, of the contents of which he is ignorant, or perhaps suspicious.

The retail druggists, through their societies and journals have shown indignation at this "charge of substituting," or more truly speaking, at this charge of dishonest dealing.

During the last month a sort of compromise on cutting and substituting has been reached, in the spirit of a plan recommended by the American Pharmaceutical Association. The wholesale druggists were represented by the National Wholesale Druggists' Association, and the manufacturers by the Association of Manufacturers and Dealers in Proprietary Articles. The manufacturers agree to sell only to those who agree to sell at the retail price, while the druggists agree not to substitute on such preparations as are included in the contract.

In no way, perhaps, can one better appreciate the truth of our opening sentence than by following these controversies in the pharmaceutical journals. A clearer idea is thus obtained of the enormous business which the patent medicine industry has achieved in this country than by a whole book of statistics.

MEDICAL NOTES.

The Power to Reject Candidates. — An important suit involving the right to reject a candidate for admission to a medical society in New York, has terminated in the acquittal of the defendant, who was chairman of a committee on admissions. According to the *Medical Record*, Dr. Robert B. Gould brought action against Dr. A. S. Hunter, Chairman of the Committee on Admissions of the Academy of Medicine, for slander as to plaintiff's professional standing, whereby his nomination to the Academy was barred. Although the utterance complained of would be ordinarily privileged as confidential, there was further charge of actual and express malice. The jury not only brought in a verdict for the defendant, as the plaintiff utterly failed to prove his point, but Judge Daly, in view of the groundlessness of the action and of the sacrifice of time and money in defending said action, granted an allowance of four hundred dollars to the defendant's counsel.

Instruction for the Army Hospital Corps. — It is reported that the secretary of war has approved the formation of two companies of instruction for the hospital corps, each company to consist of about fifty men, who will be selected from civil life. Each company will be officered by three medical officers, a captain and two lieutenants, and have as the non-commissioned force three hospital stewards and four acting stewards. The duties will include the usual drills and examinations in professional subjects. After the men have become thoroughly familiar with their duties they will be assigned to posts for actual duty. One branch of the new school will comprise instruction in theory and practice of cookery, and it is expected that not only will the men of the hospital corps become proficient in this art, but that other enlisted men of the service can be included in this branch, and that the school will ultimately furnish skilled cooks to the line of the army.

The Purity of the Air at Different Levels. — At a meeting of the Select Committee on House of Commons Ventilation, Mr. W. J. Prim described his experiments to determine the purity of London air at different elevations. He found that there were more smuts at high elevations than at low, but on a level of the court-yard there was a considerable quantity of dust. His conclusions were that the purest level was between thirty and forty feet from the ground, and that nothing was gained by going higher, unless it were practical to go very high, that is to four hundred feet.

The Simian Tongue. — The correspondent of a daily paper writes that Prof. R. L. Garner, whose study of the language of apes was described in the Journal of August 6th, is to go to Africa to make a more thorough investigation of the subject in the native woods of the gorilla and chimpanzee. He will take with him a large iron cage, constructed in sections, so as to be readily transported. Professor Garner proposes to occupy it himself, having set it up in the midst of the forest. It will be big enough to provide him with room to sleep and to study. Necessarily, the cage will have to be massively built, in order to defeat any efforts that may be made by gorillas to pull it apart. In that region the forests

at night are kept in an uproar by the howls of gorillas. These are the bachelors of the species, which are naturally disposed to postpone going to bed until morning. Here Professor Garner will establish his roost, and try to catch by ear a few suggestions of the language. He anticipates that the study he has already made of monkey talk will be a help. After acquiring by guess the meaning of a few words, he will make use of them by taking part in the howls himself. By day as well as by night he will make responses to the yells and cries of gorillas that he hears in the woods, and he thinks that in this way he will be able to attract certain individuals, especially females, about him, and intimacies may result which will afford most profitable opportunities for conversation. He will not venture out of his cage, however. Professor Garner will carry along with him eight phonographs which will be placed around the inside of the cage, with large tin trumpets fixed to their diaphragms and pointed outward to catch any words which the gorillas may speak near enough to be recorded.

NEW ENGLAND.

DIPHTHERIA IN CONNECTICUT. — In the monthly bulletin of the board, the secretary of the Connecticut State Board of Health says, that during the present year, up to the 1st of November, diphtheria has been one of the most prominent and fatal diseases in Connecticut. The mortality from it has been just double that from typhoid fever, and only three diseases, to wit, consumption, pneumonia, and infantile diarrhœa are more fatal. The feeble efforts which are made to control it have not been conspicuously successful. The failure is due to the want of an intelligent and efficient application of known means of preventing and restricting the disease. The conclusions of the paper on diphtheria in Massachusetts, by Dr. S. W. Abbott, which appears in full in this and the preceding number of the JOURNAL, are quoted and commended.

NEW YORK.

HOSPITAL FACILITIES FOR THE TREATMENT OF DIPHTHERIA AND SCARLET FEVER. — The Committee on Hygiene of the County Medical Society presented, through Dr. A. Jacobi, a report in reference to the unfortunate lack of hospital facilities in New York, for the treatment of diphtheria and scarlatina. Statistics showed, Dr. Jacobi stated, that within the last twenty-five years 60.000 persons had died from these two diseases, and the spread of such contagious affections was frequently promoted by the lack of intelligent and thorough disinfection. The disinfection of hotel rooms where persons had been sick with diphtheria, he said, was not as rigid as it should be, and he knew of rooms and suites of rooms, in some of the best hotels, in which there had been successive cases of diphtheria. With adequate means of treating such diseases in hospitals where the patients could be properly isolated, the dangers of contagion would be greatly lessened. As a result of Dr. Jacobi's report, a resolution was adopted urging the establishment of more hospitals similar to the Willard Parker Hospital, where contagious diseases may be properly treated, and also the establishment of suitable asylums or refuges, where children who are in danger of exposure to contagious diseases in the the houses where they live, may be taken and kept until such danger has passed away.

THE WATER-SUPPLY. — The recent rains have caused an abundance of water in the Croton region, so that all the storage reservoirs in Westchester and Putnam Counties are full to overflowing. In consequence the pressure in the city mains has been increased to the regular strength, and the supply furnished is now once more 165,000,000 gallons a day.

THE TELEPHONE FOR DIAGNOSIS. — In the case of a child two years and a half old, suffering from membranous croup, intubation was successfully practiced recently by Dr. J. Mount Bleyer, but when he came to remove the tube he found that the tube had entirely disappeared. In the hope that it still remained in the upper air-passages he resorted to the use of a telephonic test to locate the position of the tube before resorting to tracheotomy, and the result proved very satisfactory. A delicate metallic probe attached by an electric wire, the other end of which terminated in a telephonic receiver, was passed down through the larynx, and as soon as it came in contact with the tube a distinct click was communicated to the ear through the receiver. The exact location having thus been determined, tracheotomy was performed and the tube extracted by Dr. Frederick S. Dennis, and according to the latest accounts the child was doing well.

FRACTURE OF CERVICAL VERTEBRÆ. — A case is reported from St. Luke's Hospital, Newburgh, in which a patient lived for eight days after meeting with a fracture of the cervical vertebræ. The accident occurred from striking the head against a shed under which the man was driving.

Miscellany.

MORTALITY IN DIFFERENT OCCUPATIONS.

M. BERTILLON, in a paper presented at the Congress of Hygiene in London, shows the mortality of persons in different occupations based on statistics of the city of Paris. The average is made for each year of life, by which system different results are obtained than when the average age at death is taken as a basis. The highest rate is among cabmen, undoubtedly on account of their exposure to the weather. The drivers of other vehicles are more long lived. Saloon-keepers, although showing a high mortality, are longer lived than in England. The mortality is high where mechanics work in an atmosphere laden with dust, and especially if the dust is hard and gritty; metal-workers and stone-cutters show a higher mortality than bakers. Tailors and shoemakers show a mortality above the

normal, possibly because these trades are sought by men of weak constitutions. The trade of blacksmith, also, is apparently not conducive to long life. As in England and Switzerland, where similar statistics have been published, the longest lived persons are priests, gardeners and school-teachers.

In regard to physicians, the statistics of Paris differ from those previously obtained. The Parisian physician has a good prospect of a long life. This is, undoubtedly, due to the different life led by a city and by a country practitioner. It is to be noted that in Switzerland, although the doctors died young, their children have a low mortality. The length of life of the small class, which by reason of wealth have no regular employment, is below the average.

THE TREATMENT OF HERNIA BY MEDIAN ABDOMINAL SECTION.

In the Section on Surgery, British Medical Association, Mr. Lawson Tait read a paper on this subject.[1] He believes that the certain radical cure of hernias can only be brought about by making a median incision and drawing the gut or omentum out of the sac from within, and then stitching together the internal opening through which the hernia occurred. He takes the ground that it will always prove an easier thing to reduce the gut by this method than by attempting to shove it in from the sac, even if the sac were adherent to its contents. His experience, he says, entirely supports this theory. Mr. Keetly, of the West London Hospital, Mr. Jordon Lloyd, of the Queen's Hospital, Birmingham, and several other eminent surgeons, disagreed with the reader of the paper, in view of the fact that such obstruction, adhesion or devitalized condition of the gut might exist as would make it a dangerous and undesirable procedure to attempt to drag or put tension on the contents of the sac, especially were the bowel to be a part of the contents. Mr. Greig Smith and Prof. Bennet May agreed with Mr. Tait, in so far that they deprecated enlarging the tendinous aperture, which must be done in relieving strangulation by the older methods. In closing, Mr. Tait stated that the objections of the others were merely theoretical, and that they never occurred in practice.

TYPHOID AND TYPHO-MALARIAL FEVERS.[2]

In 1889, the Michigan State Board of Health resolved that the local boards of health throughout the State be urged to second the action of the State Board of Health by making "regulations" declaring typhoid fever a "disease dangerous to the public health," which should be reported to the health officer in accordance with the law; also, that, in the opinion of this board, all cases of so-called "typho-malarial fever" should be reported to the local health officer, and the same precautions taken as in cases of typhoid fever; also, that all cases of fever of doubtful origin continuing more than seven days should be reported to the health officer, and precautions taken as in other diseases dangerous to the public health, such as typhoid fever.

[1] British Medical Journal, September 26, 1891.
[2] Abstracts, Marine-Hospital Bureau, November 13th.

Since this action by the State Board of Health it seems that a less proportion than formerly, of the cases of fever, are reported as "typho-malarial," and an increasing proportion of the cases of typhoid fever which occur are undoubtedly being reported to the State Board of Health. The local boards of health are beginning to co-operate with the State Board. Thus, at its meeting, October 16, 1891, the Board of Health of the city of Alpena adopted substantially the same resolutions as those adopted by the State Board, and restrictive measures for the prevention of typhoid fever are coming to be general throughout Michigan. There was need for it, because the vital statistics indicate that about a thousand lives a year were being lost in Michigan from this preventable disease.

THERAPEUTIC NOTES.

Antiseptic Adhesive Ointment. — The following is an antiseptic adhesive ointment used at the Hôpital St André:[1] —

℞	Zinci oxidi	gr. ivss.
	Zinci chloridi	gr. xxiiss.
	Gelatin	ʒ v.
	Aquæ	ʒ viiss. M.

The dressing protects the surface of wounds and dispenses with the use of bandages after operations. It is especially of service for the dressing of wounds on the face.

A Simple Method for Rectal Injection. — Mr. Jones Humphreys[2] has devised an apparatus consisting of a small funnel, a piece of elastic tubing one-half an inch in diameter, one and one-half feet long, about four inches of glass tubing (by which the descending fluid can be watched), and joined on to this an ordinary flexible catheter. The hydrostatic pressure is sufficient to send any fluid into the rectum, and no return of the fluid has been observed. The instrument is an improvement on the old enema apparatus in use. It is extremely simple, the patient being able to pass the catheter into the bowel without experiencing any pain or unpleasantness. The fluid is slow in its passage.

[1] Gaz. Hebd. des Sciences Med., August 16th.
[2] Lancet, February 14th.

METEOROLOGICAL RECORD,

For the week ending November 14, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S... 8	30.12	42	44	39	84	85	84	N.		10		O.	C.	
M.. 9	30.29	40	45	34	91	92	92	N.W.	S.W.	1	11	G.	O.	
T..10	30.26	46	52	41	96	100	98	S.	E.	10	12	O.	O.	†
W.11	29.98	56	66	47	100	97	98	E.	S.W.	10	r	G	O.	.35
T..12	29.99	54	68	43	83	59	71	W.	W.	10	12	C.	O.	
F..13	30.23	45	52	38	76	54	65	W.	N.W.	12	6	C.	C.	
S..14	30.44	44	50	37	6*	58	63	W.	W.	6	10	C.	F.	

☞

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 14, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,515,301	774	269	14.95	20.15	1.69	2.21	6.89
Chicago . .	1,099,850	448	180	25.98	7.70	4.64	8.36	6.82
Philadelphia .	1,046,964	391	113	19.50	9.98	1.30	2.34	11 70
Brooklyn . .	806,343	378	136	14.58	10.26	1.79	.81	7.76
St. Louis . .	451,770	—	—	—	—	—	—	—
Boston . . .	448,439	179	57	10.64	6.72	1.12	2.24	5.59
Baltimore . .	434,439	191	70	25.44	12 72	3.18	3.18	12.72
Cincinnati . .	296,908	108	41	20.24	11 04	5.52	.92	3.68
Cleveland . .	262,000	92	28	10.86	13.08	—	1.09	4 36
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	132	49	31.82	14.44	2.28	3.80	18.24
Milwaukee . .	240,000	78	41	33.32	7.68	3.84	3.84	15.36
Washington . .	230,392	95	29	16.80	8.40	2.10	4.20	7.35
Nashville . .	76,168	29	12	24.15	—	6.90	6.90	6.90
Charleston . .	65,165	38	15	7.63	5.26	—	—	—
Portland . .	36,425	12	3	33.33	8.33	—	8.33	20.00
Worcester . .	84,655	24	12	25.00	16.66	4.16	4.16	4.16
Lowell . . .	77,696	29	10	3.45	13.80	3.45	—	—
Fall River . .	74,398	18	5	27.77	5.55	—	22.22	—
Cambridge . .	70,028	28	8	10.71	7.14	3.57	7.14	—
Lynn	55,727	17	5	11.76	—	—	—	—
Lawrence . .	44,654	17	8	11.76	—	11.76	—	—
Springfield . .	44,179	16	7	12.50	18.75	—	—	6.25
New Bedford .	40,733	21	9	28.56	9.52	14.28	—	9.52
Salem	30,801	7	3	—	—	—	—	—
Chelsea . . .	27,909	18	—	5.55	11.11	—	—	5.55
Haverhill . .	27,412	16	2	6 25	—	6.25	—	—
Brockton . .	27,294	—	—	—	—	—	—	—
Taunton . . .	26,445	12	2	25.00	16.66	—	—	16.66
Gloucester . .	24,651	5	2	20.00	—	—	—	—
Newton . . .	24,379	6	2	33.33	33.33	—	—	33.33
Malden . . .	23,031	8	4	12 50	—	—	—	12.50
Fitchburg . .	22,037	6	4	16.66	—	—	—	—
Waltham . . .	18,707	4	1	25.00	—	—	—	—
Pittsfield . .	17,281	5	2	—	—	—	—	—
Quincy . . .	16,723	2	0	—	—	—	—	—
Newburyport .	13,947	4	1	—	—	—	—	—
Medford . . .	11,079	1	1	—	—	—	—	—
Hyde Park . .	10,193	4	1	25.00	—	—	—	25.00
Peabody . . .	10,158	8	3	—	—	—	—	—

Deaths reported 3,221: under five years of age 1,145; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 507, acute lung diseases 444, consumption 355, diphtheria and croup 264, typhoid fever 105, diarrhœal diseases 79, scarlet fever 73, whooping-cough 24, cerebro-spinal meningitis 22, malarial fever 17, measles 8, erysipelas 6.

From scarlet fever New York 16, Chicago 15, Philadelphia, Brooklyn and Pittsburgh 9 each, Baltimore 6, Milwaukee 7, Cincinnati and Lynn 2 each. From whooping-cough New York 6, Chicago and Philadelphia 4 each, Washington 2, Brooklyn, Boston, Baltimore, Cleveland, Pittsburgh, Milwaukee and Springfield 1 each. From cerebro-spinal meningitis Chicago 6, New York and Brooklyn 4 each, Worcester 2, Cleveland, Washington, Fall River, Taunton, Gloucester and Fitchburg 1 each. From malarial fever Brooklyn 5, Philadelphia and Baltimore 3 each, New York and Cleveland 2 each, Nashville and Charleston 1 each. From measles New York 4, Chicago 2, Brooklyn and Baltimore 1 each. From erysipelas Chicago, Boston, Baltimore, Cleveland, Worcester and New Bedford 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending October 31st, the death-rate was 18.1. Deaths reported 3,264: acute diseases of the respiratory organs (London) 271, diarrhœa 97, whooping-cough 63, fever 56, diphtheria 44, scarlet fever 37, measles 35.

The death-rates ranged from 10.8 in Brighton to 25.0 in Sunderland; Birmingham 18.7, Bolton 15 4, Bristol 19.7, Huddersfield 12.0, Hull 21.0, Leeds 17.8, Leicester 15.4, Liverpool 21.9, London 16.7, Manchester 24.3, Newcastle-on-Tyne 22.2, Nottingham 15.9, Sheffield 17 0, Wolverhampton 20.8.

In Edinburgh 13.1, Glasgow 26.4, Dublin 24.2.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 21, 1891, TO NOVEMBER 28, 1891.

The leave of absence for seven days, granted CAPT. ARTHUR W. TAYLOR, assistant surgeon, U. S. A., is hereby extended twenty-three days.

Leave of absence for three months, with permission to apply for an extension of one month, is granted CAPT. MARSHALL W. WOOD, assistant surgeon, U. S. A.

Leave of absence for twenty days is granted CAPT. WILLIAM R. HALL, assistant surgeon, U. S. A.

The leave of absence, on surgeon's certificate of disability, granted CAPT. MARLBOROUGH C. WYETH, assistant surgeon, U. S. A., is extended three months, with permission to enter the Army and Navy General Hospital, Hot Springs, Ark.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 28, 1891.

MIDDLETON SEMMES GUEST commissioned an assistant surgeon in the Navy, November 19, 1891.

WM. MARTIN, surgeon, ordered to the U. S. S. "Thetis."

GEO. B. WILSON, assistant surgeon, detached from U. S. S. "Thetis," ordered home, and granted two months' leave.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting of the Society will be held at 19 Boylston Place, on Monday, December 7th, 1891, at 8 o'clock.

Dr W. F Whitney will read a paper on "Fat Embolism"; Dr. E. N. Whittier will read a paper entitled "Internal Antisepsis." Dr. H. C. Ernst will open the discussion.

JOHN C. MUNRO, M.D., *Secretary*.

RECENT DEATHS.

LEVI IVES, M.D., of New Haven, Conn., died December 1st, aged seventy-five. He graduated from the Yale Medical School in 1838.

G. D. DUNHAM, M.D., formerly Assistant Surgeon, U. S. A., died in Plattsburg, N. Y., November 29th.

BOOKS AND PAMPHLETS RECEIVED.

All Around the Year. Calendar for 1892. Boston: Lee and Shepard.

Electricity in Carcinoma. By Robert Newman, M.D., New York. Reprint. 1891.

Papers in Penology. Second Series. Compiled by the editor of "The Summary." 1891.

The Proceedings of the American Electro-Therapeutic Association. First Annual Meeting held at Philadelphia, September 24, 25 and 26, 1891. Reprint. 1891.

Extra-cranial Aneurysm in Early Life. By A. Jacobi, New York. Sonderabdruck aus den Verhandlungen des X. internationalen medicinischen Congresses. Berlin. 1891.

On the Treatment of Diphtheria in America. By A. Jacobi, New York. Sonderabdruck aus den Verhandlungen des X. internationalen medicinischen Congresses. Berlin. 1891.

Indigestion: A Manual of the Diagnosis and Modern Treatment of the Different Varieties of Dyspepsia. By George Herschell, M.D., Lond. London: Bailliere, Tindall and Cox. 1892.

Manual of Chemistry. By W. Simon, Ph D., M.D., Professor of Chemistry and Toxicology in the college of Physicians and Surgeons, Baltimore, etc. Third edition. Philadelphia: Lea Brothers & Co. 1891.

An Examination as to the Reliability of Certain Tests for Determining the Purity of Olive Oil. By Prof. S. Cannizzaro, Vice-President of the Senate, Italy, and Dr. G. Fabris, Analytical Chemist of the Italian Customs.

Ptomaïnes, Leucomaïnes and Bacterial Proteïds, or Chemical Factors in the Causation of Disease. By Victor C. Vaughn, Ph.D., M.D., and Frederick G. Novy, Sc.D., M.D. Second edition. Philadelphia: Lea Brothers & Co. 1891.

Text-Book of Comparative Anatomy. By Dr. Arnold Lang, Professor of Surgery in the University of Zurich. With Preface by Prof. Dr. Ernst Haeckel, F.R.S. Translated by Henry M. Bernard, M.A., and Matilda Bernard. Part I. London: MacMillan & Co. 1891.

Four Operations for Appendicitis: Three Recoveries, One Death from a very Small Concealed Abscess. A New Method of Tenotomy, by which the Tendons are Lengthened to a Definite Extent, Instead of the Present Haphazard Method. A Further Communication on a New Method of Compressing the Subclavian Artery: With the Report of Two Cases. By W. W. Keen, M.D., Philadelphia. Reprints. 1891.

Original Articles.

THE DIAGNOSIS AND TREATMENT OF HIP-JOINT DISEASE.[1]

BY V. P. GIBNEY, A.M., M.D., OF NEW YORK,
Professor of Orthopedic Surgery, New York Polyclinic; Surgeon-in-Chief to Hospital for the Ruptured and Crippled, New York, e.c.

The subject has become a hackneyed one so far as I am concerned, and I find it difficult to present anything new or interesting. Cases that have been carefully recorded sometimes furnish instruction, and I have decided to make this a clinical report, and, from the histories here recorded, will attempt to emphasize certain points in diagnosis and treatment.

Case I. Disease in first stage; prompt protective treatment; splint continuously for one year; result, a cure with perfect restoration of function.

On the 11th of April, 1887, a boy, four years of age, living in Minneapolis, Minn., came under my care for chronic ostitis of the hip, right side. The maternal family history was decidedly tuberculous. I recorded at the time a number of details confirmatory of this diathesis. The patient himself, when ten months of age, had whooping-cough, and it was many months before he fully recovered. Indeed, his mother thought he had never recovered. He had been treated for catarrhal trouble as a result of this cough. For at least a year before he came under my observation, a peculiarity in his gait had been noted. He favored the right limb, turned the toe in while walking. The mother was positive that at no time was he free from this slight limp. She was equally positive that he had had no pain for at least six months after the first appearance of the limp. Then, while wintering in Florida, he complained of pain in the groin. Shortly after the occurrence of the pain, he had a fall, which made him more lame than usual. His pain was quite severe; immediately after the fall, he complained of his knee. A physician in St. Augustine diagnosticated hip disease. The little fellow was unable to walk for three or four days. Then he got on his feet again, and had been free from pain ever since.

At the time of my examination there was a slight change in the ileo-femoral crease compared with that on the other side. There was no atrophy of the limb, no joint tenderness, no fulness about the joint, no glandular enlargement. His limb was parallel with its fellow, with the exception that, as he stood, he toed-in a little. On flexing the thigh to an acute angle he showed reflex spasm, that is, he resisted, winced a little, and by flexing the left limb, I got no such sign. I could rotate the right limb quite as well as the left, but could not abduct completely without encountering this same reflex spasm. I repeated these tests several times with uniform results. Taking into account the history, the exacerbation during the winter, the persistence in lameness, and the few signs found at this examination, I expressed my belief that ostitis was present, though deferred treatment until after another examination, which was made four days later. Examination then revealed the same signs. I learned at this time that a friend of mine, a distinguished orthopedic surgeon in New York, had expressed the same view, and had advised apparatus.

It was the first of May before I succeeded in getting a splint supplied, owing to certain unavoidable delays. The apparatus is the one commonly used, and consists of a stem, pelvic band, perineal straps, and high shoe on the sound foot. This is a perineal crutch practically, and is intended to protect the joint against trauma. The child walked on his perineum. I had some difficulty in carrying out the details because of certain chafing of the limb that occurred from the adhesive strips. It was difficult to make the mother appreciate the importance of protecting the joint at this stage. Still, by dint of perseverance, I succeeded in overcoming all obstacles and protected the joint until the summer of 1888. The apparatus was employed night and day. The first few weeks it was not changed except under my personal observation, then the limb was steadied. Later on his mother was taught how to change the adhesive plasters.

At my last examination there was no sign of disease present, the apparatus was removed, and he walked without any lameness. I saw him a year later. There had been no recurrence whatever, and the case has remained cured.

Case II. Disease in early stage; prompt application of protection-splint; not an untoward symptom afterwards; apparatus for at least eighteen months; result, cure with perfect restoration of joint functions.

On the 7th of January, 1888, a boy, eight years of age, was referred to me by Drs. William T. Lusk and William H. Flint. His history was briefly as follows: Two years previously a slight limp, right side, was observed. He had no pain. This lameness lasted a month or so, the boy complaining occasionally of a slight aching in the joint. After that it was thought that he did not limp for a period of at least eight months. Then, without apparent cause, he began to go lame again, got better, but had never been from that date to the date of my first examination, free from a halt. In November, 1887, he came under orthopedic treatment, wore a short splint; but the joint did not seem to be sufficiently protected, he had occasional pain, and for this reason was referred to me for treatment.

I found him well-nourished, quite active, limp very well marked; nates flattened; thigh three-quarters of an inch smaller than its fellow. Movements when carried to extreme limits in all directions produced reflex spasm, particularly in rotation. There was no infiltration about the joint, no bony enlargement, no joint tenderness even. The soreness was mostly periarticular. The limbs were equal in length. The diagnosis was ostitis of the right hip, chronic and probably tubercular.

I had no difficulty in persuading the father that absolute and unconditional protection was required. So we lost no time in applying a long traction-splint. From that date he never had any more pain. The splint was discarded on November 4, 1890. At that time the extension was perfect, flexion perfect, abduction not quite perfect, but no reflex spasm excited. The limbs were equal in length; there was one inch and a half atrophy of the thigh; knee action was good. I have had an opportunity of examining this boy from time to time up to the present summer, and his good condition remains unimpaired. There is no lameness whatever, he is very active, and leads an out-of-door life.

These two cases are presented to illustrate the early diagnosis made upon the existence of certain signs,

[1] Read before the Fairfield County (Conn.) Medical Society, at Stamford, October 13, 1891.

and further to illustrate the efficiency of protective treatment. The result in each case was perfect. The treatment has been very simple, but extended necessarily over a long period of time. This was done because the pathology which I adopt is this, — a tubercular inflammation in the epiphyses, near the epiphysial line, behaving exactly as similar foci do in the lung, subject to the same influences of trauma, and resolving, if sufficient protection is given and if good hygienic surroundings can be obtained.

CASE III. Disease in second stage: plaster-of-Paris spica first; protection splint for two years; abscess toward the close of second year; aspirated, subsequently opened spontaneously, soon closing; Dowse convalescing splint; excellent result, with very little lameness, a half-inch shortening.

On the 9th of July, 1884, a boy, seven years of age, was referred to me by Dr. Whitbeck, of Rochester. He began to limp in the spring of 1884. At that time he had rather a sharp exacerbation of pain. No cause could be assigned, in the way of trauma, at least. A second exacerbation came on a month or two later. His family history was fair. A trace of tuberculosis was found.

At the time of my examination there was one inch practical shortening, which is the shortening found by measuring from the umbilicus to the internal malleolus. There was no real shortening. By this I mean no difference by measuring from the anterior superior spines to the malleoli. There was an inch atrophy of the thigh. The hip was locked at an angle of 150°, practically no motion. There was no joint tenderness, but considerable periarticular tenderness, as evinced by pressure and attempted movement. There was fulness in groin and above trochanter major; pain at night, though no screaming during his sleep.

I applied at once a plaster-of-Paris spica bandage until I could get a splint ready, which was on the 25th of July. The perineal straps chafed a good deal, and it was some time before he wore the splint with comfort. By the 1st of August, 1884, he was getting about very comfortably. He had no pain during the fall of that year; the deformity became less marked. A year later it was necessary to lengthen his splint, and all the attention he required was an occasional readjustment of the adhesive straps. In 1886 he developed an abscess on the outer side of the thigh. This was aspirated. He suffered considerably during the formation of the abscess. It finally opened spontaneously, and closed within a few months. In the spring of 1889 he had so far recovered that I applied a jointed splint, what is known as a Dowse, which is a long splint with the addition of a joint at the knee, secured to the thigh and calf by a lacing, but not used for traction. This was discarded the following year, 1890. From that time to the present he has had no recurrence of symptoms. I have examined him once in about six months merely for record. My last examination was on the 15th of September, present year. There was no practical shortening, one-half inch real shortening, one-and-a-half inch atrophy of the thigh, one inch of the knee and three-quarters of the calf. The thigh could be extended to 160° and flexed to 150°. He had very little lordosis, stood with limbs very nearly parallel. He goes to school every day, walks with a very slight halt, and the result altogether is very good.

CASE IV. Disease in second stage; protection splint for a year; then abscess, which was opened, with prompt healing; apparent cure; then relapse, with deformity; osteotomy for correction of deformity; excellent final result, almost a perfect cure.

A boy, two years of age, was referred to me on the 15th of July, 1885, by Dr. Hungerford. This child was one of six. Had always been weak on his limbs, so his mother reported. Had measles in December, 1884, was a long time convalescing, had phlyctenular conjunctivitis. He favored this left limb for five months prior to the date of my first observation. Two weeks before I saw him he fell, spreading his limbs apart. Came in the house crying very much, and was lamer than usual. A few days before I saw him he was apparently unable to walk. He held his limb flexed at an angle of about 150° and resisted all movements. The parts were very sensitive. A diagnosis was made without hesitation, a splint was applied, and he did well until early in the following spring, when an abscess appeared. It was opened, thoroughly cleansed, and an effort made to secure asepsis. This was not satisfactory, but the traction afforded the limb seemed to suffice, the discharge became less, and in June, 1887, there remained only a small sinus. This sinus closed during the summer, and on the 16th September 1887, it was entirely healed. The angle of deformity was about 175°. The limb could be abducted over a small arc and rotated over about one-half the normal arc; thigh could be flexed to about 150°. The limbs were equal in length. There was an inch and a half atrophy of the thigh, three-quarters of the knee and one inch in calf. He continued the use of his splint until September 30, 1890, when the adhesive strips were abandoned and the splint was made into a kind of semi-caliper, which consisted of the same apparatus, the foot-piece being converted into a stem which passed through a tube in the heel of the shoe. He wore this for some months and then abandoned all treatment. This was without my advice. On the 22d of May, 1891, I found that he had a deformity which was unyielding. So, on the 24th of June, I attempted to correct this under ether, by manual force, but failed: then divided the femur below the trochanter minor and brought the limb down into normal position. He left the hospital on the 16th of July, with limb down to an angle of 170°. On the 6th of August I found the limbs parallel, angle of greatest extension about 175°, one-half inch shortening, real, no practical shortening, September the 29th, I saw him again, and his limb could be extended to 180°. He walks well; is wearing a convalescing splint.

CASE V. Disease with long first stage in an adult; *brisement forcé;* aggravated case; traction in bed, then splint gave prompt relief; prolonged use of splint; abscess aspirated, finally opened; second one disappeared under pressure; case convalescing; patient attending to business all the time.

On November 25, 1887, Dr. Robert F. Weir asked me to see with him in consultation a gentleman, twenty-two years of age, who had been an athlete, and who was suffering at the time of the examination from what we diagnosticated as chronic ostitis of the left hip. The patient was a hearty, robust-looking man, — family history on one side tuberculous. Four years before, while playing foot-ball, he sprained his hip. Thinks he was annoyed for two or three months thereafter with a little stiffness at night. At the end of this two or three months this stiffness passed off, and it was

almost a year later that he was troubled again with a recurrence of symptoms. So that he dates his lameness to the beginning of this second attack. Then he consulted a distinguished surgeon, now passed away, and a strain was recognized, the patient advised to keep quiet. He did not follow instructions, but continued in milder athletics until June, 1887. Dr. Weir saw him at this time, found a little swelling in the Scarpa's space. The aspirator needle was inserted with negative results. The thigh could be flexed to 90° then, quite easily, and the other movements were equally good. Expectant treatment was employed. The patient went to the country and played tennis during the summer. In the early fall he became anxious again and two or three surgeons were added to the consultation, Drs. Sands and Bull. Traumatic hip disease was diagnosticated, and it was advised that the adhesions about the joint be broken up, under ether. This was done about three weeks prior to the date of my call. Considerable inflammatory reaction followed.

We found limbs parallel, but the slightest attempt of movement caused great pain referred to the anterior surfaces of the thigh and down to the knee, with general infiltration about the hip, though no distinct tumor about Scarpa's space. There was no atrophy of the limb. Limbs equal in length. Spinal column quite flexible. The diagnosis was made of ostitis, splint was advised, and the treatment begun at once, the weight and pulley being used, pending the completion of the splint. This was applied December 17th. He was not allowed to get out of bed for at least a fortnight. He got relief at once. On February 2, 1888, he was going about using the splint, with axillary crutches. Had an occasional starting pain at night, but nothing of any serious moment. He went to the country in the following summer, and in the spring went to the University of Virginia, where an abscess developed on the outer side of the thigh about the middle third. This was aspirated by Dr. Dabney, of the University, but with rather unsatisfactory results. I saw him in the fall. The abscess had opened spontaneously. Simple dressings were applied, and he continued to go about as usual. During the winter of 1888 and '89 he had a hæmorrhage one night, which was not repeated. Dr. Loomis has examined him from time to time since then, finding nothing to account for this hæmorrhage, but advising that he avoid too much exercise and rely on climatic influences. July 5, 1889, the sinus was about closed, but on the inner side of the thigh was a distinct swelling, with fluctuation. Dr. Weir saw him with me, and advised against operative interference. By the 24th of September this tumor was reduced to one-half its original size, general health was good; the patient was working at a desk in Wall Street. On the 7th of February, 1890, the report was made that his general health was very good, weighed 190 pounds, a gain of twelve pounds in the last six weeks. There was no discharge from the old sinus, no fluctuation of the tumor on the inner side of the thigh. The thumb could be thrust well down into the old sac, which seemed to be quite empty. Rotation of the hip very fair, limb well developed. No infiltration about the hip, no tenderness or soreness. On October 2, 1890, there was no sign of any abscess; limbs equal in length; still using his splint; still attending to his business. The notes made from that time to the present show very little alteration. When I last saw him, which was August 26th, I advised that the splint be discontinued at night. I expect during the winter to apply a jointed splint and to remove the high shoe from the sound foot. The case is certainly convalescing, and the outlook for a useful limb is excellent.

Case VI. First diagnosis sacro-iliac disease, right side; later, hip disease, left side; later still, hip disease, both sides, abscesses, right side; progressive septicæmia in spite of rest and protection-treatment; excision as *dernier ressort;* excellent result.

On January 22, 1890, a boy, nine years of age, from Poughkeepsie, New York, was admitted to the hospital. He had been under observation in the outpatient department for three or four weeks, a diagnosis having been made there of sacro-iliac disease, right side. The diagnosis was based upon tenderness, peculiarity of gait, persistent pain over the sacro-iliac junction. The hips had been carefully examined with negative results. No reflex spasm whatever in any direction. The mother was advised to put him in hospital and allow us to trephine at the sacro-iliac junction and "nip" the disease "in the bud." Accordingly she admitted him.

There was no special fulness about this region, and it was decided to keep him in bed a few days and study the case more carefully. This tenderness persisted. The boy was in very good condition. After a week's time a blister was applied and operative interference was postponed.

Suddenly, one morning, after he had been in the hospital about three weeks, he complained of pain in his left hip and knee. Then we learned from the mother, who made a visit that day, that he had complained of pain in the left limb in the latter part of September, 1889, that he was quite lame for awhile, but the symptoms soon passed off and she gave no further attention to this joint. The boy was examined quite carefully, and the left side was found to be a half inch smaller than the right. With this exception there were no signs. A few days before this pain came on in the left hip and knee, he complained of pains about the left sacro-iliac junction and there was tenderness here. It was recorded on February 15, 1890, that he could flex and extend both hips perfectly, abduction and adduction of thighs good, though there was this same peculiar limp referred to the sacrum.

It was noted March 4, 1890, that there was some reflex spasm about the right hip, and on the 12th, pain in the right knee. The pain about the sacro-iliac junction had disappeared. On the 19th of March, the pain persisting in the right knee, he was put up in a plaster-of-Paris spica bandage, traction being made by weight and pulley in bed. March 29, 1890, the left hip was examined carefully without signs. On the right side the glands were infiltrated, there was fulness in iliac fossa, as well as on the anterior aspect of the thigh. A hip-splint was applied to this side, and the boy was put in a reclining chair. Next day he was suffering a good deal and was put to bed.

April 8th, the signs returned in left hip again, and the movements were all limited, so that a double plaster-of-Paris spica bandage was applied. On the 26th of May, 1890, the plaster had chafed a good deal about the bony prominence and the boy was losing flesh. He had a high temperature and he was put on the Cabott frame. A note was made August 22, 1890, that a large abscess had formed. It was aspirated on this date. Three or four days later it was

aspirated again, and about eight ounces of pus were removed. On September 30th, it was noted that the abscess had opened at the point where the aspirator needle had been inserted, there was a sinus, and on this date he was put under ether, the sinus was enlarged, sac pretty well evacuated, and the cavity well washed out and drained. He got very little relief after this, and on December 23, 1890, it was noted that he was suffering considerably, that the discharge was profuse, that the boy was emaciating, in spite of all the traction on both limbs in bed, that he was losing ground. So the abscess was thoroughly cleansed again under ether, and an attempt made to reduce the discharge. At this time all the sinuses about the sacro-iliac junction had disappeared, and it was a question, now, whether we would be able to save his hips. On January 28, 1891, another abscess was found about the right hip. This, in a few days, opened spontaneously. The drainage was good, parts were dressed every two or three days, was taking tonics and stimulants, traction was kept up unremittingly.

February 10, 1891, he had become so thin, was suffering so much, his temperature continued without any abatement, that, as a *dernier ressort*, his right hip was excised. There was very little left of the head of the bone. Acetabulum was scraped, no attempt made to get thorough cleansing of cavity, but the operation was done rapidly, the offending portion of bone removed and cavity packed with iodoformized gauze.

In this connection it may be interesting to note that on the 29th of January, 1890, we began to take his temperature night and morning. On this date it was 100.2°, on the 5th it was 101.6°. It ranged from this down to 98.4° until the 5th of March, when it reached, in the evening, 103.8°. On the 10th, it was 103.6°. On the 14th of October, it was 104°. On the 12th of November, it was 104°. It seldom fell to normal, only on two or three occasions in six months. On the 10th of February, 1891, it was 100.8° in the evening. This was the day of the operation. It reached 100.4° next day. It did not get above 100° until the 16th, when, in the evening, it reached 101°, then fell to 99° next day, and continued under 100° until the 8th of April, when it was 102°. On the 17th it fell to normal, and has remained normal up to the present time. That is, we kept a faithful record of his temperature from January 29, 1890, to April 22, 1891, at which time the sinuses were discharging very little, and he was evidently improving. He was still kept in plaster-of-Paris from the ankles up to the free ribs, the discharge was growing less and less, and every prospect for recovery was entertained.

He was sent to Saratoga in the early part of July, 1891. The sinuses were dressed very infrequently during the summer. Toward the close, on his return, he was stout, hearty-looking, and there was only one sinus, in front, which was discharging, and this was soon covered by a scab. At present writing everything is closed, plaster has been removed, and the examination recorded September 16th, showed that in the right limb, angle of greatest extension at hip was 180°, angle of greatest flexion about 150°. The left thigh could be extended to 180°, and flexed to 135°. Abduction and adduction were about one-half normal. There was a little thickening about the right hip, but no fluctuation.

He is to be fitted with a Thomas hip-splint, to extend from the scapulæ down to the calf, this splint to be applied to the right side merely to retain limb in good position. The left limb is very serviceable. Is to have a pair of axillary crutches, and as the right limb is about one inch shorter than the left, no high shoe is to be employed. The recovery is, therefore, excellent.

All of these cases, with the exception of the last, are reported to show the comfort with which patients get on, even if they have abscesses, when the joint is protected. Case V shows that the disease may develop in the adult and pursue about the same course that it does in childhood. Case III shows that the deformity can be corrected by an osteotomy, and Case VI is reported to outline the indications for excision of the hip, and a careful study, I think, will bring out points, not only in favor of excision, but in favor of protecting the parts for many months after the operation, and even after all sinuses are closed.

The conclusions, I think, that may safely be drawn from these few cases reported in detail, are:

(1) An early diagnosis can be made by any one who examines the case carefully, and who familiarizes himself with the functions of a sound joint.

(2) The necessity of regarding a case as chronic and therefore requiring prolonged protection of the joint.

(3) The comfort that any patient may derive from an apparatus that is made to fit.

(4) The benign progress of a case thus protected.

(5) The importance of maintaining parallelism and equality of the limbs at all times and under all circumstances.

(6) The advantages of an out-of-door life, which cannot be secured by bed treatment.

(7) The necessity for excision of the hip when well directed efforts at securing rest and protection to the joint have failed.

I have not attempted to give the details of treatment, have said nothing about how the splint should be applied, where it should be obtained, and what care is required during the whole course of treatment. The average practitioner should know principles, should be a good diagnostician, and should understand the pathology of the diseases he is called upon to treat. Details can be learned from the text-books and current literature.

THE following is taken from the Supplement to the *British Medical Journal:* "Under the title 'Cæcitas Syllabaris et Verbalis, sed non Litteralis,' Professor Ivan P. Mierzejewski, of St. Petersburg, describes in the 'Vestnik Klinitcheskoi i Sudebnoi Psikhiatrii i Nevropatologii,' Vol. II, 1891, a case of peculiar word blindness with normal letter vision. The patient who was a very nervous medical man, noticed that he was unable to read, though he could distinctly differentiate letters, and his sight was otherwise good. At present, examination shows that he actually can differentiate every individual letter, but utterly fails to combine letters into syllables or words." We feel obliged to confess that while reading the first few lines of the above clipping, we were affected by the same symptoms. Our greatest surprise is that in Russia these symptoms should be so rare as to be deemed worthy of mention. In looking over Russian literature we have even doubted whether we were possessed of "normal letter vision."

ATROPHY IN JOINT DISEASE.[1]

BY E. G. BRACKETT, M.D.

The value of any symptom lies not only in its uniformity, but in the definite understanding of its etiology, and of the relation of its occurrence to the pathology of the disease. The following paper has for its object the consideration of the relation of atrophy, both as a symptom, and a result of joint disease. The constancy of its appearance and its value as a diagnostic sign, is never questioned, but this relation to the disease, especially in its etiology, has not received particular attention from a purely clinical standpoint, but has rather been ascribed to those causes suggested by experiments, but which in reality were but little more than illustrations of a well-known clinical fact that this atrophy does occur in all forms of joint disease. There have been various theories advanced to explain the method of its occurrence, and which have at times, been more or less generally accepted. Two have, of late, at least, received but little attention, and were based on the propagation of the inflammation, one considering the wasting due to the extension of the inflammation of the muscle, and the other (advanced by Sabourin) to the extension of the inflammation to the nerve filaments and its propagation through them, molecule by molecule along the nerves, resulting in the wasting of the muscles supplied by them. Against these, there is not only the fact that it does not correspond to the clinical course or to the distribution of the atrophy, but also, that examination of these structures fail to show evidence of any such change.

The theory which has found the most support, supposes a nervous influence exerted through the spinal cord, that is, a reflex. Vulpian was the first to bring out a purely nervous reflex theory, and says: "In the majority of cases it must be classed among the atrophies called reflex, that is, among those which are a result of a change in such regions of the gray matter of the spinal cord, produced by irritation of the peripheral ends of certain sensitive nerves." What this change may be is not distinctly stated, but rather classed among the indefinite changes, which, to explain a clinical fact, were supposed to exist.

Charcot inclines to this theory, but gives a more definite description of the changes which he considers to occur. It so nearly resembles the reflex theory of Vulpian, that it is practically but a modification, or elaboration of it. He considers it as a spinal affection, consisting of a sort of stupor, or inertia of the cellular substance, and which is brought about by the irritated articular nerves through which the joint lesion has reacted on the spinal centre, and there modifies the centres in the spinal cord, which preside over the nutrition of the muscles and the motor nerves. He claims the existence in the cord of a connection between the cells of origin of articular nerves and of trophic and motor nerves of the extensors, and so that when other than the extensors are affected, the irritation arising in the articular nerves has spread itself by diffusion to the muscles.

These are based on the assumption, that the morbid process in the joint exerts an influence on the trophic centres in the cord, through the irritation of the nerves. The statement is purely hypothetical, and adopted rather because it seems to furnish an explanation, and not because it is borne out by pathological facts. On the other hand, it implies the absence of a pathological change, which, if true, does not admit of proof.

In view of this theory numerous experiments have been carried out, and which have been urged as proof of this mode of causation. Prominent among these are those of Valtat, and of Cazin and Duplay. They illustrate a fact well established by clinical evidence, that in acute joint diseases, atrophy occurs, but as there were no control animals, it can hardly be claimed that they do more. They are of value in determining that the atrophy is a simple one, and not attended by a pathological change, either in the muscle itself, or in the nerves or spinal cord. They do not show any definite proportion between the severity of the articular disturbance produced, or its duration.

These were all acute traumatic lesions induced in healthy animals, which were kept in more or less confinement. On the other hand, the cases seen in the clinical aspect are by a very large majority chronic, running a slow course with occasional exacerbations, but which occur usually after the establishment of the disease and not at its onset. They are of value for the purpose for which they were conducted, but they in reality have but little bearing on this subject as it appears to us clinically. There is so decided a difference between the course of an acute and a chronic joint disease that they cannot be brought together for comparison.

If it is to be grouped among the valuable diagnostic signs, its relation to the disease becomes of decided importance. If it is directly dependent on the joint disease, and the influence exerted through the nervous mechanism, there should be a somewhat constant relation between the course of the disease and its development. But since these theories are not based on pathological findings, we must turn to clinical evidence to confirm them. For this we have the fact in all forms of joint disease of the occurrence of an atrophy to a certain extent, but beyond this there is little to uphold them. We find that the degree of this varies to a wide extent, even in the same stages of the disease, and in cases of long standing to affect all parts of the limb, including the bones. It is also often noted that this atrophy does not bear any constant relation to the severity of the articular disease, to its duration, or to amount of pain, and the grouping of some of these facts show that there must be other factors which have a more or less constant influence on the causation of this condition.

In considering the influence of the severity of the disease, we must disregard those cases running an active virulent course, since in them are all the conditions which are to be considered. But in the usual case running a mild course without the persistence of active symptoms, we find so great a variation of this condition that there must be a most potent factor in its course besides an irritative nervous influence. Thus we often see in untreated cases, which have been allowed to use the leg, an atrophy which is only slight, but which is developed to a usual amount when the limb is immobilized in the course of treatment. On the other hand, cases which have early been immobilized will often show a decided atrophy, and this in the absence of acute symptoms. And also when all movements of the limb have been prohibited, as by the use of the plaster spica or the Thomas splint, the degree of

[1] Read before the American Orthopedic Association, Washington, September 22, 1891.

atrophy, is much greater than with the use of apparatus allowing more freedom. That it is not due to the pain, is shown by the fact that many of these cases, in which the atrophy is decided, pass through the whole course of the disease with but very little, and only occasional, pain. Were the irritative influence of the inflamed joint the chief factor in occurrence of this wasting, these variations could not exist. In addition, if due to this cause, nerve irritation should react more particularly on those parts connected with the joint. In place of this there is an atrophy, nearly, if not quite, evenly distributed over the entire limb, and although it has been stated by some experimenters, that the extensors are first involved, and to a greater degree, the clinical evidence will hardly bear this out. If this condition exists at all, it is to so slight a degree, as to be of no clinical value.

The active factor which seems to bear the most constant relation to this condition is the amount of use allowed, or possible, to the limb. This theory of disuse has received but little attention, and has usually been dismissed by the various authors with the mention that it is not sufficient to explain the condition; but that it holds the most important place in the etiology, I feel we are justified in assuming from our clinical evidence, not only from that which is seen in the early stages of the disease, but even more from the changes which occur later during the periods of growth. In these cases in the first stages of joint disease, we must estimate the effect of a partial disease by comparison with other conditions which are met with at the same time, and it has been chiefly argued that it is not sufficient to cause the difference which is found to exist. Therefore, the relative effect of the various influences which are met with, can be estimated only by the comparison of the degree of this atrophy under these influences which occur most frequently and uniformly. Thus, we see that there is none of those factors, the presence of which is followed constantly by any definite degree of wasting, except this one of disuse. For cases with pain and with evidence of active disease show, at times, decided atrophy, and again, but little. On the other hand, a decided atrophy appears when there has been none of the signs of active disease. For example, I have the measurements of a case, in which the sensitiveness of the joint compelled the treatment on a frame from the beginning of the disease, which appeared suddenly. In this, both limbs were confined nearly to the same degree. The difference in measurement of the thighs was but one-half inch, and of the calf one-quarter inch, after several weeks of this condition, while in another, in which there had been scarcely any sensitiveness or pain, but the treatment had been the confinement of the limb in a Thomas splint, the difference was two and three-quarter inches in the thigh and one and one-half inches in the calf.

Illustration of the direct result of complete disuse, is a case in which there had been the usual history of a slowly beginning hip disease, but the child, an active boy of ten years, had been running about at will. At the beginning of treatment the atrophy was slight, under three-quarters of an inch, thigh and calf, although there was distinct articular disease. A plaster spica was applied, and on its removal after one month, the atrophy of the whole limb was so decided, that the parents were with difficulty persuaded to allow the plaster to be renewed. There had been no increase in the disease, as shown by examination of the limb or by the subjective symptoms.

But the objection may still be urged that, although this reflex nervous disturbance may not meet the conditions under which this atrophy is found, the disuse is not sufficient to cause this amount. But in two conditions we have illustrations of this, and under which we must look only to this cause for the difference in size, — so-called functional diseases and congenital dislocation. In the former, there is the limited voluntary use of the limb, but no diseased articular structures. It is usual, however, to find an atrophy of the whole limb which is not present at first, but is developed during the course of the affection; for instance, a child of seven, of a distinct nervous temperament, after three months of this affection where use of the limb had been allowed, showed a difference of one inch in the thigh, and three-quarters of an inch in the calf, which in a month after unrestricted use of the limb was begun was diminished one-half. In the instance of congenital dislocation we find a difference in proportion to the usefulness of the joint, and with a very loose joint the loss of development is decided, involving the entire limb uniformly; for instance, a child of three, having so little impairment that only a slight limp was perceptible, showed a difference so slight that was more easily determined by comparison of the appearance of the two limbs, than by measurement. Another, where the laxity interfered decidedly with the usefulness of the limb, showed a difference of three-quarters of an inch of the thigh, and one-half inch of the calf. Whereas another child, of eleven years, in whom the limp was painfully prominent, had a difference of one and three-quarter inches in the thigh, and seven-eighths of an inch in the calf. Therefore, I think that in view of these and of the other clinical facts, this factor cannot be dismissed with the statement that it is not sufficient, but must be ranked as the important one. And when we consider the physiology of muscular nutrition, it is in direct accordance with this method of its causation. The maintenance of the normal blood-supply is the essential factor, both of the nutrition and the development, and it is regulated mainly by the activity. The contraction of the muscle is its respiration, and has been found to be attended by a tissue change (obtained by examination of the return blood) and that there exists a direct relation between this and the repair or nutrition. In other words, the muscle depends on its work for the maintenance of its fully developed working condition. Deprived of this, it suffers in proportion.

If the disuse has so great an influence in the occurrence of the atrophy in the early stages, the results of its influence can hardly be less decided in the later, and becomes at this time most important. If we are correct in placing the element of use in this prominent position among the etiological factors, we should find later in the disease, the further evidence of its influence on the development of the limb. If due to the other causes there should be an impaired development in which those parts diseased should hold the most prominent place, and in proportion to the severity of the disease, but if in the greater measure due to the lack of natural use, we must look to a general deficiency of development of all parts involved in this temporary confinement. For this we must look to the condition of the limb after many months of treat-

ment, and in doing so, the most prominent condition is that of shortening and muscular wasting, the most valuable for us in this particular, being the shortening, omitting those cases in which there has been such a displacement of the bone as to alter the usual anatomical relations.

There are three factors which can be considered in the etiology of this condition: (*a*) Bone destruction; (*b*) Reflex nervous influence, that is, an inhibition of nutrition; (*c*) The effect of immobilization. The two former need but a brief mention. That which occurs from destruction of the head of the bone is doubtless but very little. In the first place, the anatomy at these ages is such that an extensive destruction of the head is attended with but slight loss in length, and even were there such loss, it would be shown by measurement of the bone; but from a large number of observations, I have found that this does not exist, and neither is the amount determined by the suppurative process.

Were this due to the reflex inhibitory influence from the irritation of the disease on the neighboring parts, then in those cases in which the disease early becomes quiet, and remains so, there should be but little loss of growth, and this loss should be confined to the vicinity of the affected joint, neither of which is the case. In place of this we find a loss of growth, involving the whole limb, almost equally distributed, and this influenced more by the amount of use of the limb than by any other factor. The evidence of this is, that in addition to the slight degree of atrophy which is present in all forms of joint disease and in all joints, the degree of this is proportionate to the amount of use which has been allowed the limb, and with uniform distribution over both of the bones and soft parts of the whole limb, and the existence of the same condition, under other circumstances, when in the absence of disease, the limb has been restricted in its use.

To illustrate the general distribution of this lack of growth the following observations were taken. These were made in cases of chronic hip disease, taken in order as they appeared, and represent as nearly as any series can, the average case of this disease. They are of children of between four and fifteen years of age, and with a disease of about two years and over. The measurements were taken of the femur, tibia, and foot of each side, as well as of the dimensions of the thigh and calf. The average shortening was found to be as follows: femur, 6.6 per cent. of its length; tibia, 5.4 per cent. of its length; feet, 5.0 per cent. of its length. Thus that in the femur is a fraction greater than that in the tibia, and when we consider the rate of growth, it will be seen that the amount of this loss in growth is almost, if not quite equal, since the natural increase by growth of the femur is the greatest occurring in the body. Comparing it with that in the rest of the limb, we find that of the femur is nearly sevenfold, tibia is nearly four and one-half fold, foot about threefold in length. Before the third year the length of the lower extremity is doubled, quadrupled before puberty, and increased fivefold by maturity. This difference in loss by growth, then, is seen to be in the same relation as the rapidity of growth. Thus the greater loss in the femur is in proportion to its greater normal development, and compared with that in the other parts of the limb, makes the whole nearly if not quite equal.

Turning to the soft parts, the observations were made by measurements of the thigh and calf at the same points. It was found that the loss in the thigh amounted to one per cent. of the volume, as determined by this method, and in the calf, of .89 per cent. This very close resemblance scarcely needs comment other than calling attention to it.

The results of these measurements, showing as they do a uniform distribution of the loss of growth, point to the one conclusion, that it is the result of the lack of use, which is occasioned by the necessary fixation of the limb. To show that there is a relation between the amount of this shortening and the degree of confinement of the limb, I have grouped a number of cases which were treated by the Thomas splint. They were under treatment for practically the same length of time, and were in average of the same class of cases as in the preceding, but represent such during a period when the use of the limb was very strictly prohibited. The difference in length varied between one and one-half and four and one-half inches, with an average of 7.3 per cent. of the length of the sound limb. The volume of the thigh showed a loss of 23 per cent. and the calf of 17 per cent. of the sound limb.

Our facts are then the following: In all joint diseases there is a muscular atrophy occurring early in the disease, and persisting throughout its course.

The degree of this is not in proportion to the severity of the disease or to its duration, but it is determined chiefly by the amount of use permitted or possible to the limb.

This same atrophy occurs under other conditions, which restrict the use of the limb, but not occasioned by disease.

The atrophy is of the whole leg, being nearly uniformly distributed.

During the period of growth, the loss of development extends to the whole leg, and bears a relation to the degree of its confinement.

And from these facts the following conclusions are drawn: that the influence of the disease itself on the occurrence of this atrophy and impaired development is slight, but it is the result of the lack of nutrition,—a physiological result of the impaired use of the limb, which in the early stages is the result of the restriction, of either the voluntary or the involuntary action, showing itself in the general muscular wasting, and later in the loss of development, from the enforced rest, and which is seen in the smaller size of the whole limb.

The bearing of this on the treatment of chronic joint disease is evidently important. Perfect fixation, as nearly as possible, is essential during certain periods in the course of the disease, but during a large portion, movement and some use of the muscles is without harm, and this is particularly true of the long period of convalescence, when the activity of the disease has subsided, but actual use of the limb is not permissible. If during this stage we can allow, without harm, sufficient motion to the leg to stimulate some physiological nutrition, and supplement this by artificial stimulus, as by bathing, massage and electricity, we can obviate to a great extent this loss of growth which impairs the usefulness of the limb in these cured cases.

A Large Microscope is now being made in Munich for exhibition at the World's Fair in Chicago. It will magnify sixteen thousand times, and cost about six thousand dollars.

NEW HOSPITAL CONSTRUCTION FOR THE PUBLIC INSTITUTIONS OF BOSTON.

BY OTIS K. NEWELL, M.D.,
Commissioner of Public Institutions, Boston.

THE present year of the municipal government of Boston has been an important one in its relation to the care of the sick of our city and the opportunities here for the clinical study of disease, as there have been started two new sets of hospital construction from the plans of Mr. E. M. Wheelwright, City Architect. This work is especially important because, if Mayor Matthews's plans in supporting the views of the Commissioners are carried out, these buildings will be but the type of construction for others which are to follow. This will eventually centre and make accessible here in the city a vast amount of clinical material furnished by patients now scattered about in various parts of the city and State. Patients among the sick poor and insane will then (which is of first importance) be better cared for, be easily accessible to their friends, and at the same time furnish a great addition to the present opportunities in our city for the study and advancement of medical science.

There are now in charge of the Commissioners of Public Institutions of Boston 348 sick (poor and others) in hospitals, and 1,125 insane in various asylums. Among the insane, 750 odd are now boarded in various of the State institutions. This, of course, makes it hard and expensive for their friends to visit them, and deprives them in great measure of what benefit such visits are. The dormitory at Austin Farm, the second of the structures to be described below, is one of the additions to our hospital accommodations for the insane which, if followed, as is the proposal, by similar ones, will do away with this evil.

I shall give nothing further in the present communication than the descriptions of the construction of these two hospital buildings, as they have been kindly furnished to me by the City Architect.

"The cottage hospital on Long Island, Boston Harbor, is a building 211 feet long by 135 feet wide, with an interior court; and this is about half of the original plan. The rest of the building will be finished as soon as the demands require it.

"The main or administrative building is three stories high, with a 'hipped' shingle roof, and contains twenty-two rooms for the use of the physicians, nurses and matrons. This building is connected by a corridor 86 feet long to a two-story 'head-house,' used for a diet-kitchen, linen-room, and the ward-attendants' rooms. Out from this building opens the ward, 151 feet by 38 feet, and with ample accommodations for 100 beds. This room is heated by three large stacks in different parts of the room, the registers placed near the top of the room, and ventilated by separate ventilating registers under each bed, which connect with one main duct carried to a hot exhausting-flue. At the end of the ward is a wing used for baths, and a large 'sun' room.

"The exterior of the hospital will be of cement and wooden 'styles and rails,' giving the appearance of the English old 'open-timber' construction. The exterior walls of the first floor of the administrative building and corridor are built of vertical two-inch and three-inch splined and grooved plank, plastered both on the outside and inside, the laths being nailed to a thin, three-eighths inch furring, and Portland cement used for the outside finish. This makes a practically fireproof construction for wooden buildings, as the walls have no channels for the passage of fire from one floor to another, and are also free from mice or vermin. The exterior walls of the ward-room are made of bricks of terra-cotta, from the sill to the plate, in which the plastering is applied directly, without the use of laths or furring. This 'terra-cotta lumber' is made in hollow blocks, so that the inside of the wall will not condense the moisture, but will be dry at all times.

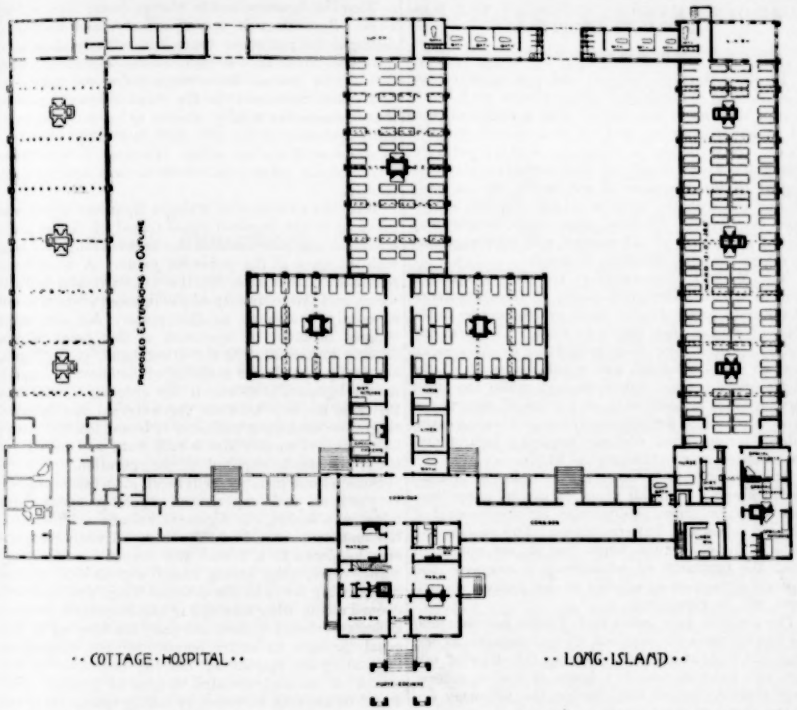
"The whole of the first floor is of 'mill construction'; which means that large hard-pine timbers (10 by 14 inches), spaced about ten feet apart are used, and these are covered with a hard-pine under-floor three inches thick, so that it would take many hours for a fire to burn through from the basement. The basement does not extend under the ward-room, but the exterior walls are of piers with open screen between, giving a constant change of air there. Shutters are to be used in winter to close in between the piers.

"The central-ward building gives four separate wards for better classification and isolation of patients, and will have about 112 beds. The cost of this building, embodying that of the central ward will not exceed $380 per bed. This price will include heating, ventilation and plumbing.

"The dormitory at Austin Farm is a building 153 feet long and 36 feet wide, with a wing 45 feet by 31 feet. The basement is used for boiler- and coal-rooms, workshops, smoking-room and large toilet-room, and is thoroughly well lighted. The first floor is divided into a dry-room (35 feet by 38 feet), a reception-room (19 feet by 33 feet), a dining-room (18 feet by 71 feet), and seven attendants' rooms, and one attendants' dormitory. The kitchen, a room 24 feet by 31 feet, is situated at the extreme end of the wing, and is ventilated by a large, brick ventilation-stack, and is well provided with closets. The second floor of the main building is one large dormitory containing 100 beds, and provided with attendants'- and watchers'-rooms; while in the wing are all the toilet- and bath-rooms, and small rooms for the sick patients. The building is finished throughout in cypress; and all the woodwork is of the plainest, having no deep mouldings or ledges for the accumulation of dust.

"The exterior of the building is to be of cement on wire laths, and divided into panels, as seen in the old English 'open-timber' work, with a pitch roof covered with cypress shingles.

"The first story is constructed of three by four inch



planks, standing upright, side by side, splined and grooved, and capped with a grooved hard-pine plate on which rest the second-floor timbers. The second story is constructed according to the customary method of frame buildings. On the outside and inside of this plank wall are nailed the three-eighths-inch furring strips, and on these the laths for the plaster, which will be of lime for inside work and of cement for the outside. By this method of construction, the exterior walls have no passages or flues from the first to the second floor, for vermin or fire, as they are practically solid walls, and will also prevent all the cold winds of winter from getting through, thereby assuring a warm building.

"The cost of this building will but little exceed $300 per bed."

.. DORMITORY, AUSTIN FARM ..

SOME GYNECOLOGICAL CASES AT THE BOSTON CITY HOSPITAL.[1]

BY J. G. BLAKE, M.D.

IN these days of frequent and successful capital operations in gynecology, it seems almost profitless to occupy the time of this Society with a recital of cases of minor importance, and without special scientific value. Nevertheless, as we cannot always control the conditions under which we find ourselves placed in regard to the character of our work, we can only do our best with the material at our disposal, and report the result. Perhaps some slight benefit may accrue in the way of information and encouragement to others not more favorably situated.

The Medical Department of the City Hospital is divided into three services — partly for the convenience of the staff, partly to suit their preferences as to the class of disease they desire to treat. The first and second services take their proportion of the general medical cases admitted, and equal shares of all the uterine cases (except laparotomies); while the third service, takes in addition to its portion of general diseases, all those of the nervous system. Ovarian cases, entered for operation, and any requiring laparotomy, are admitted only to the surgical wards.

This explanation is necessary in order to account for the absence from this paper of capital operations, such as ovariotomies, laparotomies for the removal of diseased tubes, and hysterectomies. The reader, and some of his colleagues, hope, that in the course of time, the propriety of establishing a complete and separate division as an adjunct to the medical department, will be recognized.

For the past year and a half, I have had charge of the uterine ward for a period of four months at one time, and eight at another. During this time of service, two hundred and fifty cases of uterine disease were treated, and of this number the following are among those of most interest: Fibroids, four; Alexander, ten; hæmatocele, four; pelvic abscess, six; puerperal septicæmia, ten; lacerated cervix, twenty; cancer of uterus, seven; cancer of vagina, two; lacerated perinæum, ten; lacerated perinæum and cervix, nine; stenosis of cervix, five.

To-night we will allude briefly to the Alexander's, septicæmias, and uterine fibroids — leaving the others for future discussion.

ALEXANDER'S OPERATION.

The cases of Alexander's operation, ten in number (eight in the City Hospital, and two done at St. Elizabeth's), represent fairly the difficulties, the uncertain results, and the good results attending it. As the subject has never been formally brought before the Society, this record may serve as a text for discussing it.

My own mind is pretty well made up as to its value in a certain class of cases. It is hardly necessary to go into a detail of technique before you. It may be well, however, to point out to beginners, that it is by no means so easy of successful performance as many authorities would have us believe. Indeed, one of the chief reasons assigned by some writers for discarding it, is the difficulty, uncertainty, and amount of time required to find the ligament. Three-quarters of an hour is said to be the average, but my experience leads me to believe it should be rather more than less.

That the ligament can be always found I do not believe. Sometimes it is rudimentary, and not to be distinguished; at other times it is entirely absent. I have seen three of the most skilful operators fail to find it. In two of these cases there was failure to find either ligament; in the other it was concluded that it was either wholly absent or so small as to be unrecognizable on one side, and no attempt was made to discover it on the other. In some it was found after tedious effort; in others it was located quite readily.

With the exception of a single ligament which was taken up in the inguinal canal (canal of Knuck), the operation was performed at the external inguinal ring with the spine of the pubis for guide. A blunt hook was used to lift up the fat, the muscular and cellular tissue, and the extremity of the ligament, which is not especially tendonous at this point. An advantage claimed in favor of operation at this point is less liability to hernia. On the other hand, it is alleged, and justly, that in the majority of instances the search for the ligament is shorter if the opening is made into the canal midway between the external and internal ring. Its tendonous character is better marked here; an incision of smaller size is sufficient; and anæsthesia is not necessarily required for the operation.

Some of our members will recall an occasion when a very expert and experienced operator spent forty minutes in finding the ligament on one side, while a few moments sufficed on the other. A similar experience happened to a friend and myself in one of my earlier cases, when having wasted a great deal of time in searching for it in the external ring, the canal was opened at the other side and it was discovered without difficulty. Some writers advocate the opening of the canal through its entire length, for the purpose of facilitating the operation; but the objection to this would lie in the increased danger of hernia. This might be avoided, however, by taking special care, and closing the wound immediately by deep sutures.

On the whole, I should incline to the external ring as safest for the patient eventually. It should not be forgotten that the prolonged narcosis — often extending to an hour and a half — is not wholly free from danger. One of these cases sank into a state of utter collapse, from which only the most vigorous methods steadily persevered in for a long period, succeeded in restoring her. In two instances I felt satisfied that the safety of the patient would be best promoted by operating only on one ligament at a time, letting the other rest for a few days or a week. While this may not seem good practice, it appeared the safest and wisest course to pursue.

The class of cases were the simple backward displacements so commonly found where instruments do not readily keep the uterus in position, or where they cannot be worn without inducing pain or distress. In all these the result has been, with one exception, uniformly good.

One case particularly calls for special notice. A woman, practically bed-ridden, morbid in mind, feeling that she was the victim of incurable spinal disease, with pain in the back, inability to walk, etc., was transferred to the uterine from the nervous ward. An extremely tender, retroflexed, and enlarged uterus was returned to its normal size and position, by a month of glycerine-tampon-packing treatment; and then kept there by shortening each round ligament two inches

[1] Read before the Obstetrical Society of Boston, October 10, 1891.

and a half. The patient left the hospital free from backache, able to walk, strong, fat and happy. Such a result makes the physician's heart rejoice and leads him to believe that life is indeed worth living.

I have had no experience with cases where adhesions exist and have to be broken up, or with the many other complicated conditions which call for the operation. The future, I hope, will enable me to test its value more fully, and I shall be glad to report results. So far I have been more than pleased.

Clinical Department.

TWO CASES OF POST-PARTUM HÆMORRHAGE WITH SPECIAL FEATURES.[1]

BY S. L. ABBOT, M.D.

Case I. Mrs. ——, quartipara, over forty years of age. Called to this patient at five P. M., I found her in the first stage of labor. A male child was born at eleven P. M. Nothing abnormal in the labor. Following the birth of the child was a pretty free discharge of coagula. The uterus contracted peculiarly after the delivery of the placenta, becoming flattened from before backwards, extending somewhat higher than usual, and of abnormal width, with two deep, longitudinal grooves; the grooves and the ridge between them being each more than a finger's width in breadth. The organ was firm to the touch, but of this unusual shape. It was carefully watched for some time for fear it might become relaxed and hæmorrhage follow. A moderate dose of fluid extract of ergot was also given. This, however, caused so much pain that it became necessary to administer morphine to relieve it.

During the birth there was a laceration of the perineum which extended pretty deeply into the vaginal sphincter. This was closed by one deep stitch which brought the raw surfaces firmly together, so that they healed by first intention. In two of the previous three labors it had been necessary to sew up similar lacerations. The result of the stitching on the present occasion was to narrow the vaginal outlet pretty closely, partly from the fact that the vagina was rather small, the woman being somewhat under size.

On account of the unusual condition of the uterus I remained four hours with the patient watching for possible relaxation and consequent hæmorrhage. At the end of this time, as no change had taken place, I left her.

On the following morning the condition was the same. There had been no marked hæmorrhage.

At two o'clock of the following morning I was hastily summoned with the announcement that the patient was flowing freely. On reaching the house I was told that the flowing had ceased, but a considerable amount of clots had come away. On making a vaginal examination it was found that the vagina was distended to the utmost with coagulum, After this was removed the os uteri was found to be open widely, easily admitting the ends of four fingers and quite lax. No coagulum was in the lower part of the organ. Above the pubes it was felt to be flattened, grooved and contracted as before. There was no subsequent hæmorrhage. What was the probable explanation of the phenomena?

[1] Read before the Obstetrical Society of Boston, October 10, 1891.

It seems probably to have been caused by the damming up of the vaginal outlet by the suture. The flow from the uterus was not urgent and a small clot forming above the tampon which was placed within the sphincter vaginæ during the insertion of the stitch, but which was subsequently removed, was probably obstacle enough to prevent a free escape of the flow from the womb, so that in time the stretched vagina above was fully distended, the clot backing up into the uterus itself. This probably excited contraction and emptying of the organ, leading to an abrupt escape of a good deal of coagulum, creating the alarm which led to my summons to the house. After the coagulum left in the vagina was cleared out there was no subsequent hæmorrhage. The uterus gradually contracted to its normal size, retaining as long as it could be felt its abnormal shape.

It should be remarked that there was no fætor about the coagulum, and it was not thought necessary to wash out the vagina after its removal. Convalescence was rather slow, the patient suffering a good deal from left temporal neuralgia which was followed at the end of the third week by phlebitis below the right knee. There was no reason whatever to believe this was due to a septic cause.

Case II. Mrs. G., secundipara. A young lady of marked nervous temperament, about twenty-five years old. When I reached the patient labor was well advanced, and a male child was born an hour after. The child was followed by a rush of blood, coagula and liquor amnii, saturating six sheets folded many times beneath her, and extending from her heels to her neck on the india-rubber cloth below. The patient was blanched, but did not become unconscious from the flow. A mass of coagula and blood with liquor amnii, scooped up with the hands, half filled a large chamber pot. The pulse was extremely weak, and the patient's condition called for prompt action to prevent, if possible, any further hæmorrhage. A half-drachm dose of fluid extract of ergot was therefore given at once, and stimulants were freely administered. The uterus was firm to the touch, and the hand was kept over it with the view of aiding the delivery of the placenta. This, however, was delayed. There were uterine pains, but the placenta was not expelled. The cord was kept tense with the right hand, and with the forefinger the fœtal surface of the organ could be felt bulging into the vagina, but not advancing. There was, however, at that time no bleeding.

After waiting a reasonable time, having made my hand and arm aseptic with solution of the bichloride, I passed my hand without difficulty into the uterus to the fundus. The surface from which the placenta had been detached, was distinctly felt on the right side of the organ, and there was no hæmorrhage from it. At the fundus the afterbirth was felt to be held at that point, by a firm grip on its edge. A part of the organ extending from two to three inches from the edge was thus grasped. My first impression was that there must be an adhesion at this point; but in passing the tips of two fingers between it and the womb, with some difficulty, it was found to be held in place merely by the contraction of that organ. After scooping it from its hold, the placenta was easily removed and there was no more hæmorrhage.

In her first labor the patient was so suddenly taken with pains that there was not time to summon me, and a neighboring physician was called in. In this

case also, the birth of the child was followed immediately by a very profuse hæmorrhage, so that, according to the patient's statement, she was unconscious for six hours.

A DISPLACED APPENDIX CŒCI GIVING RISE TO SYMPTOMS SUPPOSED TO BE DUE TO AN OVARIAN TUMOR.

BY FRANCIS B. HARRINGTON, M.D.,
Surgeon to Out-Patients at the Massachusetts General Hospital; Assistant in Clinical Surgery, Harvard University, Medical Department.

MRS. C., thirty-nine years of age, is the mother of two children, one five years old, the other, two and a half. She had always been well until six years ago, when a year before the birth of the first child, she began to have attacks of pain low down in the abdomen. These attacks occurred at intervals, and between them there were periods of comparatively good health. The pain was often intense, and sometimes accompanied by nausea, vomiting and abdominal distension. The attacks gradually diminished in frequency. Since the birth of the second child the attacks have increased in frequency and in severity. She has had for the last two years almost complete disability. There is constant pain in the pelvic region, backache, bearing-down feelings, with repeated attacks of abdominal colic, tenderness and distention. The patient had not consulted a physician since the birth of her child, although in a very wretched condition.

On vaginal examination, I found a somewhat irregular mass, the size of an orange, behind the uterus. It was not painful on pressure. The uterus was freely movable. There was no rise of temperature, the digestive organs were in good condition. The diagnosis of a cystic tumor was made and an operation advised. After opening the abdominal cavity, a tumor of the right ovary was found, and was removed in the usual way. The left ovary with the tube was also removed because it was enlarged and looked diseased. On examining the pelvic cavity, it was seen that the appendix cœci was lying out of its usual position and extended down along the posterior wall of the pelvis on the right side. It was somewhat thickened, reddened and rigid. It was abnormally hard to the touch. It was deemed wise to remove it. The patient made good recovery, and twelve weeks after the operation is about, free from the old pain and discomfort.

The following is Dr. W. F. Whitney's report of the appearances of the specimens:

"(1) One ovary was of ovoid shape, four centimetres by two centimetres and was attached at one end. The surface was slightly roughened. On section, numerous small cysts (largest one a centimetre in diameter) were disclosed, filled with a pale, watery fluid. Microscopic examination failed to show any marked deviation from the normal structure. The tube was of normal size, but slightly convoluted, the twists bound together by firm adhesions.

"(2) The other ovary was replaced by a single cyst about six centimetres in diameter. The walls were of moderate thickness, dense, with a few irregular thickenings. The inner surface was smooth, the outer slightly rough. Microscopic examination showed the wall to be made up of a dense fibrous tissue, — the outer part cellular, recalling the stroma of an ovary; in the inner part filled with thick vessels similar to those of the centre of the ovary. In the wall was a minute cavity lined with low epithelium. The tube was slightly thickened on the peritoneal surface.

"(3) The appendix was slightly thickened especially at the apex which contained a small concretion. The peritoneal surface was thickened, and showed an increased vascularity, with here and there minute clumps of blood pigment. Nothing else abnormal noticed.

"The essential changes are a cystoma of one ovary, retention cysts of the other.

"Chronic peritonitis of the appendix, with a concretion present."

It is probable that much of the pain and discomfort arose from the condition of the appendix, and that the ovaries took only a minor part in causing the disability of the patient. Dr. Whitney has suggested that the pain which patients with chronic inflammation of the appendix suffer, may be caused in part by peristaltic action in that organ. Such an appendix could not be detected by manual examination.

The case suggests the importance of bearing in mind the possibility of a displaced appendix as a cause of pelvic disease in women, and the writer would urge the importance of examining the appendix in all cases of laparotomy in which it can be done with ease. I have seen several of these appendices in which the pathological changes do not seem to be commensurate with the symptoms. Yet their removal has relieved the patient of very great suffering.

[1] Read before the Obstetrical Society of Boston, October 10, 1891.

Medical Progress.

RECENT PROGRESS IN THORACIC DISEASE.

BY GEORGE G. SEARS, M.D.

A VISIBLE HEART.[1]

THE case is reported of a child, about a fortnight old, in whom the sternum and costal cartilages were imperfectly developed. The heart could be seen most distinctly through the thin cutaneous wall of the chest. The shape and size of the auricles and ventricles, with the filling of the auricles with blood, were quite as visible for practical purposes as if the organ were completely exposed to view.

CARDIAC TONICS.[2]

IN a very instructive lecture on the cardiac tonics, G. Sée arrives at the following conclusions:

Digitalin increases the diastolic elasticity of the heart, thus increasing its capacity and allowing more complete filling of the arteries. The systole is not exaggerated, and the vessels are not always contracted, so that digitalin regulates the action of the heart without strengthening the organ. It is best given, if a large dose (half a milligramme, one-seventy-fifth of a grain) be indicated, twice on the first day, followed in the following two or three days by small doses to sustain the effect. Even then one is often obliged to wait before the desired result is obtained, as the drug is but slightly soluble, and owing to the feeble condition of the patient absorption may be slow.

Iodide of potash acts similarly; it dilates the vessels still more, and considerably facilitates the peripheral circulation as well as that in the nutrient vessels of

[1] New York Medical Record, February 14, 1891.
[2] Médicine Moderne, July 2, 1891.

the heart. From the latter point of view it is a cardiac nutrient; from the former, it regulates its action, especially if there be pulmonary congestion, dyspnœa or asthma. One gramme (fifteen grains), should be given in milk or beer three times a day with meals for five days out of seven, and indefinitely continued.

Strophanthin is an energetic vaso-constrictor; it increases the force of the heart only indirectly, and its effect is transitory. It acts promptly and does not accumulate, one-fourth of a milligramme should be prescribed, either in tincture or pill form.

Spartein and convallamarin are often indispensable auxiliaries of the preceding drugs. The action of the first is almost instantaneous, but its effect is soon lost, so that it should be given two or three times daily; two to four grains may be given in twenty-four hours. Convallamarin has no cumulative action, and five to eight grains may be given daily.

Caffein is especially valuable as a diuretic in dropsy of cardiac origin; it is also a general excitant, but not especially of the heart.

Lactose, like caffein, is a renal diuretic and has no action on the heart or vessels.

PAINFUL SENSATIONS IN HEART DISEASE.

Nothnagel[3] has analyzed 483 cases of valvular cardiac disease with reference to the sensation of pain. Of 114 cases of aortic insufficiency it was present as a symptom in 69; of five cases of aortic stenosis it was present in two; of 23 cases of double aortic lesion it appeared in 15. Out of 17 cases of combined mitral and aortic insufficiency but three complained of it, and only 14 of a total of 183 cases of pure mitral insufficiency. In mitral stenosis it was present in four of 22 cases, and in double mitral lesions in 20 out of 118. It was not present in one case of pulmonary stenosis. It was therefore most common in combined stenosis and insufficiency of the aortic valves, most rare in pure mitral insufficiency, results which tally well with those of other authors; but it is to be said that Nothnagel includes all painful sensations, and not simply those of so-called steno-cardial attacks, which practically occur only with insufficiency and stenosis of the aortic valve. Apart from the steno-cardial paroxysms, of which shooting pain into the left arm is typical, other forms of pain are present in valvular disease, which have been variously described as burning, boring, tearing, etc. In this class of cases frequently, but not always, objective disturbances of sensation are found in an increased susceptibility to pain on pinching or pricking, in the precordial region, sometimes even extending around to the back. This hyperalgesia may also be present when the patient has no sensation of pain. In myocardial affections, where physical examination, as well as the history, is so often unsatisfactory, such painful sensations may direct one's attention to the heart or establish a doubtful diagnosis. Of course the mere fact of pain in the cardiac region does not point necessarily to a myocardial disease, for it is often enough present without; but the frequency of its presence in such affections would lead to closer examination before assuming it to be due to rheumatism, costal neuralgia, circumscribed pleurisy or the like. As regards the source of such pain in myocardial disease, it is possible that the cardiac ganglia whose sympathetic character has been demonstrated by His and Romberg are implicated. In valvular disease, however, from the greater frequency with which aortic lesions are accompanied by pain, it is probable that it originates in the vessels rather than the heart. The frequency with which aortic aneurism is accompanied by pain corroborates this view.

[3] Zeitschft. f. Klin. Med., Bd. xix., H. 3.

PURULENT PERICARDITIS TREATED BY FREE INCISION.

Davidson[4] reports the following successful case. The patient, a boy six years and nine months old, was admitted to the hospital suffering from empyema of the left side, which was treated by free incision. Twelve days later, signs of pericardial effusion having appeared, the pericardium was aspirated in the fourth interspace one inch from the left border of the sternum and pus drawn out. An incision was then made at the point of puncture, and a moderate sized drainage-tube inserted. Two months later the boy was discharged well, and has since remained in excellent health. Bronner[5] also reports a case in a girl aged eleven, which was treated in the same way, but death followed about four weeks later. The incision was made in the fourth intercostal interspace one inch to the left of the sternum, a trocar having first been introduced as a guide, and "the heart never seemed to come near either the trocar or the scalpel."

In commenting on Dr. Bronner's case, West[6] says that, in his opinion, the dangers of surgical interference with the pericardium are greatly exaggerated. The only risk is that of wounding the heart, and with care this may be avoided. Exploratory punctures and paracentesis he considered to be much more dangerous than incision, especially if the ordinary blunt aspirating needles are used. He has tapped the pericardium several times without any misadventure, though on one occasion he was alarmed by getting nothing but a jet of blood. He at once removed the needle, and of course drew off no fluid; but for some reason or other the patient was greatly relieved and rapidly improved from the time of the puncture. The chief risk is from error in diagnosis, as the difficulties in some cases are considerable in distinguishing between a greatly distended heart and pericardial effusion. Even then it is not a clean puncture through the walls of the heart which is dangerous, for this has frequently occurred as the result of accident and has even been deliberately performed with the object of tapping a greatly distended cavity. The fatal result has been due not to clean puncture but to laceration. With proper care, puncture of the pericardium may be performed without any real risk, and the dangers of the rapid removal of fluid are for the most part imaginary. The same may be said of washing out the pericardial cavity.

In conclusion, he states that the patient he operated upon has been for years in active work and is capable of any ordinary muscular exertion. Except for the scar there is absolutely nothing to indicate that he ever had anything the matter with him.

[4] British Medical Journal, March 14, 1891.
[5] Loc. cit., February 14, 1891.
[6] Loc. cit., February 21, 1891

THE DIAGNOSIS OF LARGE PULMONARY CAVITIES.[7]

Schultze reports a case which shows how difficult it may be to diagnose with any certainty the presence of a large excavation in the lungs. The most marked and typical signs of a cavity were found, yet at the autopsy no large cavity was found but only a system

[7] Centrbit. f. klin. Med., xii, 19, 1891.

of small spaces. The pleura was not adherent. The case was not of tubercular origin, and in case operation had been attempted as proposed, no brilliant result was likely to follow.

SALICYLATE OF SODA IN SEROUS PLEURISY.[8]

In 1877, Professor Germain Sée pointed out that in cases of articular rhematism, salicylate of soda, while curing the primary disease, distinctly prevented inflammation of serous membranes. In 1883, Professor Aufrecht showed that the salicylate is an excellent remedy for idiopathic serous pleurisies, whatever their origin; this was subsequently confirmed by Professors H. Eichhorst, Maragliano and Stiller, and Drs. Drzewiecki, Tetz of Lublin (*Therapeutische Monatshefte*, No. 7, 1890), Déri (*Pester med.-chirurg. Presse*, No. 26, 1891), and Talamon (*Médicine Moderne*, No. 25, 1891). According to Tetz and Talamon, the curative effect of salicylate of soda in serous pleurisy is not less specific than in rheumatism. Dr. M. A. Strizover, of Odessa, now reports (*Meditzinskoïé Obozreniïé*, No. 15, 1891, p. 218) eight cases of exudative pleurisy, in which he gave the drug internally, in one-gramme doses, three times a day. To prevent collapse the salicylate was always given after meals, each dose being followed by a draught of good wine. In seven cases temperature rapidly fell to normal, and the subjective condition improved, while in about a week dyspnœa was relieved and the area of dulness lessened, every one of the patients completely recovering in about eighteen days. In the eighth case the treatment (of four days' duration) utterly failed. The symptoms pointed to empyema. An exploratory aspiration was made, and a sero-purulent fluid escaped. The patient was ultimately cured by a radical operation (excision of rib, etc.). Dr. Strizover comes to the following conclusions: (1) salicylate of soda is undoubtedly a most valuable remedy in serous pleurisy; (2) at the same time it affords a reliable means of determining the character of pleural effusion, that is, of differentiating serous from sero-purulent or purulent pleurisy.

ACUTE PULMONARY CONGESTION OF A PSEUDO-PLEURITIC TYPE.

Dr. Berthier[9] says that there is a form of pneumonia, termed by Professor Grancher *pneumonie massive*, which gives the signs of pleural effusion, namely, complete dulness on percussion and absence of vocal vibrations and respiratory sounds. The ramifications of the bronchial tubes up to the larger divisions are filled with exudation. Grancher has also described another form which yields similar physical signs and which he has named spléno-pneumonie. He supposed it to be due to a sero-albuminous and epithelial inflammation. Dr. Berthier reports a case occurring in a young man after influenza. There were signs of fluid at the left base, but exploration with the needle was negative. The expectoration consisted at first of pure blood. On the fourth day the patient grew much worse and became cyanotic, and similar signs were found at the right base with bronchial breathing and bronchophony at the angle of the scapula. Later, friction sounds were heard over the subspinous fossa, first on the right, and later on the left side. The patient was discharged well in six weeks' time. Berthier remarks that the "congestion" was very intense in this case, the parenchyma of the lungs as well as the smaller tubes being infiltrated with blood.

AUSCULTATORY PERCUSSION.[10]

From a pretty large number of observations on both the living subject and on the cadaver just previous to the autopsy, F. W. Jackson has reached the following conclusions as to the value of auscultatory percussion:

(1) It is of no value, in his hands at least, in the examination of the liver, kidneys or spleen.

(2) It is a very valuable method of estimating the area of cardiac dulness, and it is much superior to ordinary percussion for this purpose, but it is not to be regarded as absolutely accurate.

(3) It is doubtful if it can be relied upon to delineate less than a quarter of an inch enlargement of the heart, and therefore is of no value in hypertrophy of a heart without dilatation.

(4) By its use the heart may be outlined in conditions of the lung, such as emphysema and consolidation in which ordinary percussion is not available.

(5) If by its use the left border of the heart is recognized as being outside the areola of the left nipple, or, better, more than four inches and a half from the midsternal line in a man of medium size, or five inches in a large man, the heart may be considered to be enlarged, especially if the vertical diameter exceeds four inches.

THE TREATMENT OF ACUTE LOBAR PNEUMONIA.[11]

In a very interesting paper W. P. Fenwick analyses 1,000 cases of pneumonia, and thus summarizes his results: Every item of evidence, whether pathological or clinical, leads to the inevitable conclusion that the fatal result of acute pneumonia is caused by cardiac failure, which is the result of two general factors, increased resistance to the propulsive action of the heart and a progressive deterioration of its muscular substance induced by the high temperature, for it has been shown in the body of the paper that death is most liable to occur at two periods of the disease, about the fifth day, when the fever is at its height, or at the crisis when cardiac failure is apt to result from its sudden withdrawal.

Two great methods of treatment were examined in detail as to their influence upon the mortality of the disease. In one we find the chief remedies were aimed at relieving the condition of the lung; and while stimulants were freely administered, with the object of whipping up the flagging heart, the causes of its physical lameness were allowed to go on unmolested. The result was that among 552 cases so treated the mortality exceeded 23 per cent., although alcohol was given in no less than 70 per cent.

In the second case, a method of treatment was adopted with one special object, to economize cardiac force by minimizing the injurious influences of fever. In 108 cases of similar severity to the foregoing the treatment consisted in the systematic reduction of temperature by sponging (the temperature of the water being 116°), or by ice cradling, Of this number only 45 (41 per cent.) received alcohol, and only 10 per cent. died. Again, among the former class 46 deaths resulted from collapse at the crisis of the fever. Among the latter, where especial attention was paid to this

[8] Supplement British Medical Journal, October 24, 1891.
[9] Rev. de Méd., New York Medical Record, September 12, 1891.
[10] New York Medical Journal, June 20, 1891.
[11] Lancet, January 31 and February 7, 1891.

source of danger, not a single death is reported from this cause. Nothing could be more conclusive, for these facts show to what a considerable extent the mortality from acute pneumonia may be reduced when prophylactic treatment is applied with a view of strengthening that vital position against which death concentrates the force of his attack. And this success which has attended this rational treatment of acute pneumonia appears as a still further argument in favor of the specific febrile nature of the disease, for it would indicate that the consolidation of the lung is, after all, but an analogue of the typhoid ulcer and of the scarlatinal sore throat — a characteristic result, but never the cause of the disease. It was also shown that, first, the quantity of albumen in the urine is of considerable prognostic value, secondly, that the crisis is often a period of great danger to life, and, thirdly, that those cases which begin with a severe gastro-intestinal attack are twice as liable to end fatally as those which begin with the more usual initial rigor.

RESECTION OF THE LUNG.[12]

Dr. Tuffier presented at a recent meeting of the Société de Chirurgie a patient on whom he practised in March last excision of the summit of the right lung for localized tuberculosis, and gave the details of the operation. The man, aged twenty-five, was of stout build and enjoyed perfect health until two months ago, when he was attacked with cough, night-sweats, and tuberculous laryngitis, and for which he entered the hospital. Auscultation revealed the following symptoms: At the top of the right lung slight dulness, respiration rude and jerky, expiration prolonged, and dry crepitation in coughing; the left lung was perfectly healthy, and the patient, being made aware of his condition, accepted the risks and perils of operative interference, especially as medical treatment but little changed his condition. The *modus operandi* was as follows: A cushion being placed under the back so as to efface as much as possible the subclavicular fossa, an incision was made through the second intercostal space to within half an inch of the sternum; the great pectoral and the intercostal muscles were similarly incised, and the pleura brought to view, which being cut in turn, the tissue of the lung appeared. The operator then passed in his finger and detached the serous membrane above and without with comparative ease, but when he reached the inside the membrane yielded, and immediately a hissing sound occurred, indicating an escape of air or the formation of a pneumothorax. The finger was applied to the spot, and subsequently a plug of iodoform gauze. Continuing the operation, M. Tuffier passed his finger behind the summit of the lung, and seizing the tissue with a special flat forceps drew it forward, threw a ligature around it and fixed the pedicle to the periosteum on the internal side of the second rib. The muscles were then sutured and the wound dressed with iodoform. The piece resected was examined, and in its centre was discovered an induration of about the size of a small walnut, and surrounded with tubercles in which bacilli existed. The man made a rapid recovery, and a minute auscultation of the lung showed that the respiratory murmur, although it was a little weakened, was present throughout the whole organ without revealing the slightest sign of a pleural effusion.

[12] Medical Press, June 3, 1891.

Reports of Societies.

AMERICAN GYNECOLOGICAL SOCIETY.

SIXTEENTH ANNUAL MEETING HELD AT WASHINGTON, SEPT. 22–24, 1891.

(Continued from No. 23, page 606.)

DR. CORNELIUS KOLLOCK, of Cheraw, S. C., read a paper on

THE IMMEDIATE CLOSURE OF LACERATION OF THE CERVIX.

The writer would not say that lacerations of the cervix should always be closed immediately, but he believed that there were many instances where it is not only proper but urgently demanded. Where the conditions are favorable, and it can be done without too much handling of the congested and torn cervix, the sooner the cervix is closed the better, not only for the instant relief afforded, but for the promise of a more sure and complete union of the parts; the woman is also saved much mental and physical suffering.

He believes in some respects the primary operation for laceration of the cervix stands to the secondary operation, as the primary operation for laceration of the perineum does to the secondary operation in cases of that kind. In both primary operations fresh parts are brought together, and healthy union is very sure to take place. The knife is not used in either case, and the patient is saved shock from that source, and also saved the loss of blood, which is sometimes considerable in the secondary operation on both cervix and perineum. The writer reported three cases of laceration in which he operated immediately after labor, with signal success.

It has been claimed that sutures introduced for the immediate closure of a laceration of the cervix cannot be depended upon, that as the congestion and tenderness of the cervix subsides they will become loose and fail to keep the edges of the laceration in proper coaptation. In answer to this, it may be said that it is not at all uncommon for sutures to pull out when the secondary operation is done for laceration of the cervix. The objection to the secondary operation is that the presence of cicatricial tissue renders the parts more difficult of coaptation, and the process of union is slower. The congestion and tender condition of the cervix does not so strongly forbid the introduction of sutures into it. In the Cæsarean section, which is now done with signal success, compared to what it was twenty-five years ago, sutures are introduced into the uterus when it is in the highest state of congestion, and when its vascularity is very great, and the tendency of the sutures to pull out, is not reckoned among the most patent causes of the failure of the operation.

DR. CHARLES JEWETT remarked that this operation was frequently advocated but very little practised. He had done it in a few instances with entire satisfaction. It is a proper procedure where the cervix is torn to any extent, and where it is deeply torn it is imperative. The operation may be objectionable in ordinary hands, but presents no difficulties for the expert. There was danger of infection to the patient, and much manipulation of the passages after labor should be avoided. If the passages were thoroughly aseptic, he believed many of the minor lacerations would heal spontaneously.

DR. EMMET would not undertake to immediately repair a lacerated perineum unless there was hæmorrhage. If you guard the patient against blood-poisoning, local peritonitis or cellulitis by keeping the cervix clean, it will repair itself. If the laceration be a deep or extensive one, he would repair it if possible.

DR. COE regarded the measure as a purely hæmostatic one. He regarded a laceration of the cervix as a contused wound, which should be allowed to heal by granulation.

DR. A. P. DUDLEY was in favor of the primary operation, because it secured immediate union and saved the difficulty of cutting away any portion of the uterus to get union by the secondary operation, thus also avoiding the deformity resulting from the use of the knife.

DR. KOLLOCK, in closing the discussion, remarked that, without regard to the fact of hæmorrhage being present, if the laceration was extensive, he would advocate its immediate closure.

DR. EUGENE GEHRUNG, of St. Louis, read a paper entitled,

THE PREVENTATIVE AND CONSERVATIVE TREATMENT OF PELVIC TUMORS.

In many instances of pelvic tumor surgical treatment is not applicable where other means of palliation are possible. Where the same or nearly the same result can be obtained by minor means, though less brilliant, they should have the preference. There is a universal law — the greater the resistance to an imprisoned force, the greater the tendency to break the barrier; and, *vice versa*, the barrier being broken, the less the tendency of the force to assert itself. This law is wonderfully illustrated in pelvic tumors — the greater the resistance the more rapid and destructive is their growth, and, *vice versa*, the lesser the resistance the lesser their growth; and in the absence of resistance their growth frequently comes to a stand-still, and at times becomes retrograde. The sudden springing into life and rapid growth of many small myomata which may have existed in the pelvis for years, is due to the tumor becoming compressed and irritated; the circulation being interfered with, congestion follows, and it grows rapidly. Resistance and growth go hand in hand. Many subperitoneal tumors commence to grow rapidly only after they begin to sink into the small pelvis, where the resistance is the greatest. The ovary is subject to the same law, the commencement of its abnormal growth frequently dating from its displacement or strangulation by adhesions. If displaced, it suffers pressure from the surrounding organs, and pathological processes follow, with the development of cysts.

The same is true of the uterus, which becomes enlarged if through displacement its venous circulation is interfered with, or atrophied if its arterial circulation is impeded. It may be stated, as a general rule, that either one of these three conditions — the incarcerated myomata and other tumors, the displaced ovary, or the strangulated womb — will, upon being released from their precarious positions, cease to grow, and if kept free from pressure, will in time return to their normal size.

As preventative measures, and as a means of obtaining these results, the writer recommended: (1) a clear and early diagnosis of the tumor; (2) the hands of the operator, by means of which possible adhesions may be broken up and the tumor lifted out of the bony pelvis; (3) the almost lost art of the scientific use of the pessary — the tumor or organ being freed from its imprisonment should be supported in the right position by a pessary. Tampons of cotton or other material may be used as a temporary means, but as a rule, they are found inefficient. Three cases were mentioned as illustrative of each of these three conditions, where the writer was successful in arresting the growth of the tumors.

Dr. Gehrung claimed that if these tumors were relieved from pressure and from interference with their circulation, that they would lose their energy if not their vitality.

DR. E. REYNOLDS, of Boston, read a paper on

THE ANATOMICAL RELATIONS OF THE LACERATED PERINEUM TO THE MECHANICS OF ITS CAUSATION.

The paper began with an account of some observations which the writer had been making during the last five years upon the shape and position of the rent in different cases, with an attempt to classify all perineal and vaginal tears as modifications to a greater or less extent of one type form, which is substantially that described by Dr. Emmet in 1883, consisting of two lateral longitudinal tears of the vagina, joined at their lower extremities by a transverse tear and connected with the external surface by a median tear of the tissues below the crescent. This tear, but slightly modified is stated to be the most common form. That which has seemed to be the next in frequency is one of the lateral tears, the half crescent, and the external tear. The crescent alone is not infrequent. I have also seen one lateral tear extend down through the skin by the side of the anus, without passing towards the median line. The writer thought that all lesser variations could be arranged under these four varieties. He then attempted to explain the determination of the rent by reference to the pelvic anatomy dividing the tissues of the pelvic floor into layers, of which the superior consists of the recto-vesical and obturator-vesical fascia, with the coccygeal muscles, reinforced anteriorly by the triangular ligament; while the inferior layer consists of the two layers of the superficial fascia, compressor urethræ, superficial, transverse and sphincter ani muscles.

In detail, he then explained the anatomy in its relation to the causation of the different rents referred to. He believed the essential element in the repair of all lacerations must consist of the insertion of such sutures as will draw the torn edge of the upper layer downward, and those of the lower layer upward, until they meet at the central point from which they were originally separated.

DR. GEORGE KEITH, of Brooklyn, read a paper on

THE ELECTRICAL TREATMENT OF UTERINE FIBROIDS IN ENGLAND.

A careful study of the work of the Keiths and other surgeons in Great Britain for some years past, and a comparison of the results obtained by the electrical treatment for the cure of uterine fibroids and the operation of hysterectomy and removal of the ovaries, confirmed his belief in favor of the electrical treatment. The treatment of these fibroids should not be restricted to any one method. The older Keith, the writer said, had by no means given up hysterectomy, having operated three times within the last six months to the

writer's knowledge, but he does believe electricity will cure the vast majority of cases, and guard against the necessity of hysterectomy in many. Hysterectomy is, no doubt, often performed for the removal of a tumor giving little trouble, which could have been cured by electricity.

Hysterectomy has in its favor, when the patient does not die after the operation, that the tumor is done with for all time, and the convalescence is rapid. The disadvantages are: the mortality, the melancholic condition into which patients frequently fall, the fact that the life of the ordinary fibroid is limited.

Electricity is in its infancy. When it is as old as hysterectomy, the death-rate will have been much diminished. There are some cases where operation is to be recommended. This must be insisted upon, for the opponents of electricity are apt to say that its advocates decline all operative procedures on all occasions. Hysterectomy is advisable in large fibrocystic tumors, and also perhaps in those surrounded by free fluid; also for removal of the appendages when the tubes and ovaries are seriously diseased, especially if there be any suppuration.

Dr. W. E. Ford recalled the question raised in the Society last year; as to whether there were any actual cures of fibroids by galvanism, and stated that since then he had investigated a number of the cases treated by him in the past seven years, and found that a large number of the small fibroids were cured, and the very large intra-mural growths lessened in size. In dangerous cases of large fibroids galvanism promises more than hysterectomy. These large fibroids are adherent and dangerous cases for operation, but they are safe ones for electricity provided there is no history of pus accumulation in the pelvis. The element of cure in the galvanic current is its ampèrage and not its voltage; the volume and not the tension produces the electrolysis.

Dr. Sutton was strongly opposed to electricity in these cases, and believed that hysterectomy was the only rational procedure.

Dr. W. H. Baker, of Boston, said electricity for the treatment of fibroids had been a success in his hands, and he was satisfied with the results in nineteen cases out of twenty.

Dr. Clement Cleveland, of New York, read a short paper on the advantages of

LAPAROTOMY IN TRENDELENBURG'S POSTURE, WITH EXHIBITION OF A NEW OPERATING-TABLE.

This posture was first recommended by Professor Trendelenburg, of Bonn, in 1884, but has not been used until recently in this country, when Dr. Edebohls, in 1889, brought out his table adapted for laparotomy in this posture as well as for general gynecological work.

In this posture the body is so placed that the intestines will drop toward the diaphragm, and at the same time leave the abdominal muscles relaxed. The body is inclined with the head downward, the weight of the body resting on the shoulders, the thighs and knees flexed on the body so as to secure relaxation of the abdominal muscles. A saving in time of at least fifty per cent. is gained by the use of this posture in preference to the ordinary laparotomy position.

The writer exhibited the table which he had devised, which was a modification of the Edebohls table, and was alike useful for the Trendelenburg posture or for general gynecological work. When used for the latter purpose, it was brought to a horizontal position and firmly clamped, and would sustain a weight of two hundred pounds.

Dr. Henry D. Fry, of Washington, read a paper on

DIABETES MELLITUS GRAVIDARUM.

Gravidity increases the susceptibility of woman to certain diseases, and often changes the type of the malady by accentuating its dangers.

Pregnancy rarely occurs in diabetic woman, — the disease tending to produce a diminution of sexual energy. Diabetes undoubtedly occurs in women already pregnant, but is apt to escape notice in the majority of cases.

The urine should be examined for sugar where there are obscure symptoms in the pregnancy; also where there is a dead child born without apparent cause.

When there is a predisposition to diabetes, pregnancy is liable to act as an exciting cause. It may develop in the beginning of gestation or be deferred until about the period of quickening. Pregnancy sometimes causes the disease to assume an acute form. Pregnancy is frequently interrupted by miscarriage or premature birth of a dead child usually about seventh month. Excessive development of fœtus has been observed. In some cases pregnancy will clear up the diabetes, which will not appear until a subsequent pregnancy. Cases recovering after labor should be carefully watched to prevent a relapse. The symptoms after labor in severe cases of diabetes, especially where the child is dead, are those of exhaustion and threatened collapse, mental condition blunted, death preceded by coma from few hours to several days.

Prognosis. — Mild cases become acute, and acute ones progress rapidly to a fatal termination. Some few cases remain mild, and extend through repeated pregnancies. Prognosis very grave, if a child is born dead prematurely; favorable, if born healthy at term.

The writer was of the opinion that a diabetic woman should not marry.

Treatment.— Induction of premature labor. In the mild cases interference is not justifiable. In the acute cases, with rapid emaciation and exhaustion, prompt action is demanded. The child usually succumbing about the seventh month, labor must, therefore, be induced at the earliest period of viability.

(*To be continued.*)

THE OBSTETRICAL SOCIETY OF BOSTON.

CHARLES W. TOWNSEND, M.D., SECRETARY.

Meeting of October 10, 1891.

Dr. Blake reported

SOME GYNECOLOGICAL CASES AT THE CITY HOSPITAL.[1]

Dr. Abbot wished to speak of a method employed by him of introducing glycerine into the vagina. He used glycerine plasma, and thought the amount of glycerine which could be introduced in this way of great advantage. His mode of using it consisted in taking a common rubber syringe with fair-sized barrel, cutting off the end, then putting in the tampon, and on top of this the plasma, introducing into the vagina, and by the means of the piston injecting first plasma then tampon.

Dr. Davenport said he had done the Alexander

[1] See page 622 of the Journal.

operation but twice, and thought that pessaries could be used in most cases of displacement; where they are not, there is apt to be tubal trouble. He had seen some cases where patients were worse after operation.

DR. HARRINGTON had never regretted doing the operation. He had seen slight hernia follow. He had broken one ligament, but found a large one on the other side which had held for six months. He sewed wound up without drainage.

DR. BLAKE thought the operation saved the woman from a life of bother and annoyance from a pessary.

DR. SINCLAIR: Is it necessary for a woman to wear a pessary for a life-time? The uterus held in position becomes lighter, and after a time, will remain in position if the supports below are intact.

DR. RICHARDSON thought the cases of septicæmia of particular interest, as showing what could be done with proper treatment, even at a late date. At the Boston Lying-in Hospital, cases were detected at once. Patients with an elevation of temperature which did not come down in the morning were immediately looked at, washed out with corrosive, and iodoform used; the temperature would fall at once.

DR. HARRINGTON reported

A CASE OF REMOVAL OF AN INFLAMED APPENDIX DURING OVARIOTOMY.[1]

DR. DAVENPORT: I think it is a valuable suggestion in cases where pain has been present and unaccounted for.

DR. BLAKE: In cases of ordinary operation for pelvic trouble, would the reader advise searching for and examining the appendix, and should the wound be increased for this purpose?

DR. HARRINGTON: I think it a wise thing to look for the appendix without enlarging the wound.

DR. BLAKE: The ordinary incision is very small, and is not large enough to examine much of the pelvic contents.

DR. REYNOLDS: In the case reported, did the appendix lie in the pelvis?

DR. HARRINGTON: Yes.

DR. BLAKE: This point should certainly be borne in mind. I recollect one case which ended fatally where an abscess had ruptured.

DR. HARRINGTON: I think it well to look at the appendix in all cases where the amount of suffering is disproportionate to the apparent amount of disease.

DR. BAKER: This would make us more conservative.

DR. BLAKE: This accounts for pain following laparotomy where the cause had apparently been removed.

DR. SINCLAIR: Can the appendix be distinguished by vaginal examination?

DR. REYNOLDS spoke of a case where nothing was found under ether, yet at operation a diseased appendix was removed.

DR. ABBOT reported

TWO CASES OF POST-PARTUM HÆMORRHAGE.[2]

DR. RICHARDSON: It is, I think, a great mistake to give ergot before the placenta has been removed, and also think it a very poor means of arresting hæmorrhage, as much blood can be lost before ergot begins to have any effect upon it. In Dr. Abbot's case I think it was the ergot which caused the contraction which held the placenta.

[1] See page 624 of the Journal.
[2] See page 623 of the Journal.

DR. ABBOT said that he had come to the same conclusion himself as to the cause of the retention of the placenta; but the urgency of the case was such that he wanted to get the womb well contracted at once, and so gave the ergot. He did not, as a rule, give it after the birth of the child, but only when the womb failed to contract well after the placenta had come away. He never gave it for the purpose of expelling that organ.

DR. REYNOLDS had a case of hæmatoma in the labia due to injury of vessel by Hagerdon's needles. Should never use a needle of this make to repair a perineum after labor.

DR. COTTING exhibited Needle-Holders.

DR. BROWN showed a Specimen of Fatty Placenta, from Dr. Forster.

Recent Literature.

Epidemic Influenza: Notes on its Origin and Method of Spread. By RICHARD SISLEY, M.D., F.R.C.P. London and New York: Longmans, Green & Co. 1891.

This book is a royal octavo of 150 pages, very handsomely gotten up by the publishers. It is divided into fourteen chapters, with an appendix giving the text of the English Infectious Disease Notification Act of 1889, and an index.

The title would be still more correct if it read, Epidemic Influenza: Notes on its Origin and to Prove its Spread by Contagion.

The heading of Chapter V reads thus: "Influenza is contagious, and is chiefly, if not entirely, spread by contagion. Nature of the evidence offered in support of this view."

On page 88 the author states as a fact that, "influenza spreads along the most frequented lines of human communication." Chapter XIV is one page in length, and is a plea that influenza should be placed by a short act of Parliament "in the position to which it is justly entitled amongst the infectious diseases for which notification is compulsory."

The writer treats his subject from the standpoint of the advocate rather than from that of the judge. Every earnest contribution to the study of this perplexing malady is, however, worthy of serious attention, and especially so now that the disease has again manifested itself in a serious form at several points on the Continent of Europe.

Influenza or Epidemic Catharrhal Fever. An Historical Survey of Past Epidemics in Great Britain from 1510 to 1890. Being a new and revised edition of "Annals of Influenza," by Theophilus Thompson, M.D., F.R.C.P., F.R.S. By E. SYMES THOMPSON, M.D., F.R.C.P., etc. London: Percival & Co. 1890.

As indicated on the title-page this volume is a new and revised edition of the well-known treatise on Influenza published under the auspices of the Council of the Sydenham Society as one of the Society's series of publications. In addition to the revised text of his father's work, the present work, by Dr. E. Symes Thompson, contains seventy pages devoted to the epidemic of 1889–90, a summary of epidemics, and a chronological survey of recorded epidemics adapted from Hirsch.

The author's conclusions in regard to the question of contagion tally with those to be drawn from data obtained by the Massachusetts State Board of Health. His closing remarks seem to us so sensible and judicial that we quote them in full: "The greatest difference has prevailed, and still prevails, upon the apparently simple question of the contagiousness of influenza. A careful *résumé* of the evidence and opinions of competent observers, however, authorizes the belief that the disease is contagious, but it does not of course follow — nor does the author believe — that contagion is the only, or even the most frequent method of communication. The assertion that the malady had been imported into this country by direct contagion from parcels, letters, etc., emanating from infected districts, is not borne out by facts; at any rate, the history of the outbreak as it affected the post office and foreign office employees affords the idea no kind of support. The fact that the disease does not spread more rapidly now than of yore, in spite of the present methods of rapid transit, and the fact, too, that it does not necessarily spread along the main lines of travel, suffice to demonstrate the fallacy of the assumption of the disease being spread principally by contagion. Contagion, such as it is, seems to act more promptly on persons engaged in the open air, but there are so many apparent exceptions to this rule that it would be imprudent to insist upon it."

Essentials of Physiology. Arranged in the form of Questions and Answers. Prepared especially for students of medicine. By H. A. HARE, B.Sc., M.D. Third edition, thoroughly revised and enlarged; pp. xlvii, 193. Philadelphia: W. B. Saunders. 1891.

The enlargement of this edition consists of nine double plates, reproduced from Arnold's *Icones Nervorum Capitis*, to illustrate the anatomy of the cranial nerves. These plates are handsomely printed, and will be very welcome to many although their size renders them a little confusing on account of the wealth of detail. The "revision" of the question portion of the book can still be much improved, although this "compend" is even now better than many of the kind.

Medical Symbolism in Connection with Historical Studies in the Arts of Healing and Hygiene. No. 9 in the Physician's and Student's Ready Reference Series. By THOMAS L. SORINSKEY, M.D., Ph.D. Illustrated. Philadelphia and London: F. A. Davis. 1891.

The author of this essay, though born in Ireland, received his medical education and practised his profession in Philadelphia, where he died in his thirty-seventh year, shortly after the completion of this little treatise on a subject which deserves a more accurate knowledge than is probably possessed of it by most of the medical profession.

The book shows to what uses proximity to so excellent a medical library as that of the College of Physicians, of Philadelphia, may be put — a library which the author regards as "the centre, probably, of medical learning in the United States."

Æsculapius and the Æsculapian Serpent and Staff; Dibarra, a god of pestilence; Hygeia, the goddess of health; medical talismans and amulets; pharmacists' symbols; miscellaneous medical symbols and medical symbolism in practice, are the subjects of the principal chapters of the book.

Fever: Its Pathology and Treatment by Antipyretics. No. 10 in the Physician's and Student's Ready Reference Series. Being an essay which was awarded the Boylston Prize of Harvard University, July, 1890. By HOBART AMORY HARE, M.D., B.Sc., etc. Philadelphia and London: F. A. Davis. 1891.

The title of this essay, when presented to the Boylston Prize Committee, early in 1890, was, "The Uses and Value of Antipyretics." The essay is a concise summary of the conclusions of many of the best observers, by one who has had some personal, experimental and clinical experience in the subject treated. A record of the untoward effects produced by the various drugs considered is given in tabular form. There is, it seems to us, an undue tendency at present to neglect and decry the antipyretics. Some have failed to use them with discretion, and as a result, others fail to use them at all. Dr. Hare recognizes the value of the coal-tar products, both as antipyretics, when suitably employed, and as analgesics. He thinks that antipyrin stands foremost in the ranks of the antipyretics, with antifebrin next, while thallin and phenacetine follow, with perhaps (we should say certainly) a preference for the latter. As an analgesic, he still puts antipyrin in the lead, but regards phenacetine as quite as useful an analgesic as antifebrin and more safe. Thallin possesses hardly any such power. Dr. Hare's essay is a convenient and judicious summary of the subject treated.

The Pathology, Diagnosis and Treatment of Intracranial Growths. Fiske Fund Prize Dissertation. By PHILIP COOMBS KNAPP, A.M., M.D. (Harvard) Clinical Instructor in Diseases of the Nervous System, Harvard Medical School; Physician for Diseases of the Nervous System to Out-Patients, Boston City Hospital; Member of the American Neurological Association; Fellow of the Massachusetts Medical Society, etc. Boston: Press of Rockwell & Churchill. 1891.

Dr. Knapp's essay is based upon the records and autopsies of forty cases, of which thirty-eight were patients at the Boston City Hospital. The greater number of them had not previously been reported. The author has also availed himself freely of the literature of the subject without attempting an exhaustive review of it. His references are to sixty-two authors or subjects, and he draws his conclusions from 965 reported cases, including his own. The 161 pages of his book are marked by the thorough and painstaking work to which we are accustomed in the author, with a clearness of statement and excellence of diction and a systematic arrangement which make the subject interesting and the search for information as easy as it can be in the absence of an index. The essay is a valuable contribution to the literature of its subject.

Memoir of Joseph Leidy, M.D., LL.D. By HENRY C. CHAPMAN, M.D., Professor of Institutes of Medicine in the Jefferson Medical College. From the Proceedings of the Academy of Natural Sciences of Philadelphia, June 30, 1891.

This is a graceful and well-deserved tribute to the memory of a very remarkable man, the extent and accuracy of whose scientific learning was only equalled by the sweetness of whose character. Of his friend and teacher, Dr. Chapman says: "It falls to the lot of but few, living in the midst of a great community for threescore years and ten, to have never made an en-

emy during that long period, but to have gained universal affection, esteem and respect. Yet this may, in truth, be said of Leidy."

After two years' experience as a practitioner of medicine, Dr. Leidy gave up practice and devoted himself entirely to study and teaching — with what results, the love and admiration of his pupils, the list of his contributions to science embracing no less than 553 titles, and the names of the learned societies in all parts of the world to which he was elected a member, declare.

It is a curious and interesting fact, noted by Dr. Chapman, that the first scientific communication of any kind, made by Dr. Leidy, was a paper on the anatomy of *Littorina angulifera*, submitted July 16, 1845, to the Boston Society of Natural History, and published in that society's journal.

Essentials of Nervous Diseases and Insanity. By JOHN C. SHAW, M.D. 12mo, pp. viii, 194. With forty-eight original illustrations. Philadelphia: W. B. Saunders. 1892.

On general principles we can find no reason for commending the various brief compends which are published by various houses. Their sole reason for existence seems to be the opportunity they afford a lazy student to cram up for examination. The volume before us, however, is clearly and intelligently written; we have noted few inaccuracies and several suggestive points; some affections unmentioned in many of the newer text-books, such as Morvan's disease and acromegaly are noted, although others, of equal importance, are omitted. Curiously enough, no mention is made of the so-called traumatic neuroses. In some sections brief bibliographies are given. In the section on sexual perversion, this bibliography fails to give the title of Krafft-Ebing's work, obviously an oversight, as Krafft-Ebing is directly quoted.

The Practice of Hypnotic Suggestion. By GEO. L. KINGSBURY, M.A., M.D. 8vo, pp. viii, 206. Bristol: John Wright & Co. 1891.

The aim of the present work, which grew out of the discussion of hypnotism before the British Medical Association a year ago, is to "acquaint its readers with the rudiments of practical therapeutic hypnotism, and to warn them against its dangers and difficulties." The writer is a follower of Bernheim, and, of course, a believer in the value of suggestive therapeutics, but in the present volume he omits all discussion of theories and controversial subjects, and gives a clear and careful account of the methods of hypnotizing, the indications for suggestive therapeutics, and the possible dangers and the means of avoiding them, with brief references to history and to the more distinctly psychological relations of hypnotism. He has succeeded in his aim of giving a readable and intelligent presentation of the rudiments of the subject, and his work is a good introduction to the more elaborate treatise of Bernheim.

The Diseases of Personality. By TH. RIBOT. Small 8vo, pp. 157. Chicago: The Open Court Publishing Co. 1891.

This work of Ribot is not unfamiliar to alienists, and the present translation in its convenient form will prove acceptable. It is rather a study of personal consciousness, and an analysis of the conception of the *ego*, as aided by the morbid phenomena of consciousness, than a clinical treatise on any group of diseases. The idea of personality is made up, according to the writer, of a sum of all the sensations — not only of the transitory sensations which are, as some say, the sensations present in consciousness, but the vast undercurrent of organic sensations, seldom reaching the higher consciousness, but present in sub-consciousness. These, being stable, afford a basis for the stability of the idea of personality. "Personality results from two fundamental factors, the constitution of the body with the tendencies and sentiments that manifest it, and the memory." The disorders of personality are studied first under the heading of organic disorders, a study of personality as observed in double monsters and twins, and the changes observed in certain disorders of sensibility. The curious changes in personality in hysteria and various emotional disorders are then noted, the disorders as observed in insanity, and finally the dissolution of personality observed in the grave forms of dementia. There are three classes of derangements, the general sense of the body is completely changed, and an entirely new *ego* develops, perhaps with a memory of the past *ego;* there is alternation of two personalities, each perhaps ignorant of the other, and the new, second personality sometimes encroaching on the original; and finally a more superficial type of substitution of personality where the individual imagines himself to be some one else. It would have been of interest, under the second class, if the translator had added a reference to the more recent work of Janet.

Records of the Association of Acting-Assistant Surgeons of the United States Army, A. D. 1891. Edited by W. THORNTON PARKER, M.D., Recorder, A. A. A. S. Edition limited to 200 copies. Salem, Mass: Salem Press Publishing and Printing Co. 1891.

The association of past and present acting-assistant surgeons of the United States Army who have served before, during or since the War of the Rebellion, was formed for the purpose of securing a correct history of those who served in this capacity, and also for mutual protection and benefit. Its members especially desire to obtain a better position for the acting-assistant surgeon. They desire that acting-assistant surgeons (now serving) many of whom have served long and faithfully, performing all the duties of commissioned surgeons, and many of whom are past the age permitting them to apply for examination for commissions as first-lieutenants in the medical corps, may be commissioned assistant surgeons with the rank of second-lieutenant of cavalry — not in the line of promotion — that they may have an established position and be no longer liable to discharge at the whim of the commanding officer.

The first meeting of the association was held at Newport, R. I., on June 24, 1889, Professor A. Reeves Jackson, of Chicago, presiding. At this meeting steps were taken to carry out the objects already mentioned, and also to bring about the possibility of membership in the Grand Army of the Republic for the contract surgeons. The acting-assistant (or contract) surgeons of the war, having never been commissioned, never received an honorable discharge, and the laws of the Grand Army of the Republic make such honorable discharge a prerequisite to membership.

The book contains the history of several of its members, some of whom served during the Rebellion, and some after. These lives differ in length and in modesty,

as doctors' autobiographies are apt to do; but as a whole, they are interesting as autobiographies an apt to be.

This association must strike most uniformed persons who first hear the name as a multiplication of useless associations; but no one can look through this report without gaining a respect for the object the association hopes to attain. The contract surgeons of the war included some of our brightest and best men, who look back with pride to the work they were able to do. It ought to be the policy of the Government to so treat its servants as to maintain their pride in their work and their love for their country.

On Severe Vomiting During Pregnancy. By GRAILY HEWITT, M.D. 8vo, pp. 147. London: Longmans, Green & Co. 1890.

The basis of this essay is a paper read before the American Gynecological Society in 1888, which in turn is an amplification of a paper by the same author in 1871. The views of Dr. Hewitt on the ætiology of the vomiting of pregnancy are quite well known, and to a certain extent quite generally accepted. He believes that the evidence of recorded cases shows that the vomiting is of reflex origin, the seat of irritation being in the uterus; further that the irritation is "an undue pressure or tension of the nerve filaments distributed in the walls of the cervix, especially those in the vicinity of the internal os, possibly to direct pressure on the cervical ganglion in some cases." "The alterations of the uterus proved by recorded cases to be most frequently present in cases of severe vomiting are: (*a*) marked flexion forwards or backwards; (*b*) rigidity of tissues of the cervix; (*c*) impaction or detention of the body of the uterus in the pelvis. These three factors are most frequently associated, in various degrees of severity."

The value of Dr. Hewitt's monograph consists largely in his array of cases, from which his deductions clearly and convincingly follow; but the fact remains that numerous cases of pregnancy-vomiting are observed for which no local cause can be found by expert examination,— cases which appear to be due to hyperæsthetic nerves, to emotional causes, to hysteria. Hewitt's views cannot, therefore, be accepted as of universal or indeed general application; but his work is of decided value as elucidating one phase of the subject, and as such must be welcomed as a positive addition to our knowledge.

A Text-Book of Obstetrics, including the Pathology and Therapeutics of the Puerperal State. Designed for Practitioners and Students of Medicine. By PROF. F. WINCKEL, of Munich. Translated from the first German edition by J. CLIFTON EDGAR, A.M., M.D. Philadelphia: P. Blakiston, Son & Co. 1890.

This is a complete and systematic treatise, a careful and adequate review of which is not warranted by the space at our command. The material upon which the book is based embraces the cases of the several clinics to which the distinguished author has been attached in Berlin, Rostock, Dresden and Munich; and also includes cases seen in the private practice of the author and of his father and grandfather. The book opens with an historical sketch, and a catalogue of text-books in all languages on this subject. The most prominent features of the work are the pathology and treatment of pregnancy and labor; but, as the title indicates, the puerperal state receives adequate attention, and there are twelve chapters on the diseases of the new-born. Throughout the book, each chapter is headed with the literature of the subject, and there are 190 illustrations, which, with the exception of those of instruments, are entirely new.

The volume is somewhat ponderous, having over nine hundred octavo pages, and will doubtless seem appalling to a third year student; it will meet its greatest usefulness in the hands of advanced students and teachers, and will be found valuable for reference by the practitioner. Few men living have had greater opportunities for observation than Winckel in this department of medicine, and this work will place within the reach of his many admirers the fruits of his long and arduous years of professional activity.

A Short Manual of Analytical Chemistry, Qualitative and Quantitative, Inorganic and Organic. By JOHN MUTER, M.A., Ph.D., etc. First American, from the Fourth English edition. Edited by CLAUDE C. HAMILTON, M.D., Ph.G. Philadelphia: P. Blakiston, Son & Co. 1891.

This book is arranged on the principle of the course of instruction given at the South London School of Pharmacy. The first 150 pages are devoted to general qualitative and quantitative analysis. Then follow short chapters on certain special processes: one on the analysis of water, air and food, a second on the analysis of drugs and wine, a third on the analysis of gases, polarization, and spectrum analysis. The reviser has made some changes in the original text in order to adapt the book to use in this country. The chapter on urinary analysis has been enlarged and illustrated, and cuts of microscopic urinary sediments added; that on water analysis has been altered to correspond with Wauklyn's methods; certain special processes have been added, and several other minor changes made. The book is, on the whole, a fairly good one; not as complete as some, yet containing about all that is needed by the average chemical student. The most unsatisfactory part is the section on urinary analysis. About six pages are given to this important subject. Its treatment is therefore necessarily very superficial. The cuts give but a very imperfect idea of the microscopic appearances of the various urinary sediments. The subject of urinary analysis is one which should not, in our opinion, find a place in general text-books of analytical chemistry.

Report on Cholera in Europe and India. By EDWARD O. SHAKESPEARE, A.M., M.D., Ph.D., United States Commissioner, of Philadelphia, Washington: Government Printing Office. 1890.

This large and elaborate volume is the result of an executive order by President Cleveland, designating Dr. Shakespeare to proceed to such countries as were indicated, and to make a study of epidemic cholera. The work of investigation and labor of preparation was undertaken voluntarily, and without pay for personal services. Proceeding to Palermo and thence to Spain, the disease was studied in all its relations, and subsequently, in India much was added to the work. Not only the spread and hygienic surroundings found in the course of the disease, but also a careful and thorough study of the pathology of the disease and cultivation of the bacillus, appears in the volume (illustrated by numerous carefully prepared charts, maps and plates). For those interested in the study of this disease, and in the prevention of cholera epidemics, this publication offers much which is new and interesting.

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THE PURIFICATION OF SEWAGE.

PART I of the Supplementary Report of the Massachusetts State Board of Health on Water-Supply and Sewerage, has already been commented on in a previous number of the Journal.[1] Part II deals with the important question of the means of rendering fouled water innocuous, and consists chiefly in statements of results of experiments at Lawrence, under the direction of the distinguished engineer, Hiram F. Mills, member of the board, to which are appended reports of chemical and bacteriological investigations, and upon nitrification of filth.

The experiment station, a description of which is given, was established to determine the fundamental principles of filtration not previously known, and to learn what can practically be accomplished by filters made of some of the widely varying materials found in suitable localities for filtration areas. Thirty-two different filters were used, and the results, chemically and biologically, are most fully recorded.

The distinctive and essential differences between continuous and intermittent filtration are presented by alternately using one method, then the other, upon the same filter, with the same daily quantity of sewage. It is shown that the efficiency of intermittent filtration depends upon the process of nitrification, which is proved not to occur in continuous filtration. The conditions favorable to nitrification, its dependence upon nitrifying organisms, and the condition of the surface and degree of saturation of the filtering material, are brought out by many examples, throwing much new light upon the subject. It is shown that while nitrifying bacteria are necessary in producing nitrification, the process of complete nitrification of the organic matter of the sewage is one of complete destruction of other bacteria, and, it is presumed, of all disease germs. The process of purification of sewage by intermittent filtration is proved to be in no essential sense a straining process, but completed only when sewage passes down through a mass of coarse gravel in very slow motion, in extremely thin films over the surface of each stone, exposed to air, with the nitrifying bacteria, which exist in the sewage, attached to the surfaces of the stones. In intermittent filtration of water, only three hundred thousand gallons could be so far purified for six days in the week upon an acre as to cause the belief that the bacteria in it had been killed.

The results of experiments in cleansing sewage by chemical precipitation will be interesting to those towns where that is the best available solution of their sewage question.

The chemists and biologists add greatly to the value of the report in methods of analysis, in investigations into the nature of the changes which nitrogenous matter undergoes in the process of oxidation by filtration or chemical precipitation, and especially in accounts of means employed and results reached in bacteriological examinations. Among the micro-organisms in sewage, twelve species of bacteria are described with full illustrations from photomicrographs. Some bacteria evidently may pass through filters of coarse sand, but probably not through very fine sand.

The experiment station, in co-operation with the chemical and biological laboratories, has been the means of settling or corroborating some theories hitherto in doubt, and the generalizations therefrom cannot fail to be of great practical value.

[1] Experimental Investigations by the State Board of Health of Massachusetts upon the Purification of Sewage by Filtration and by Chemical Precipitation, and upon the Intermittent Filtration of Water. Made at Lawrence, Mass., 1888-1890. Part II of Report on Water-Supply and Sewerage. Boston: Wright & Potter Printing Company, State Printers, 18 Post Office Square. 1890.

[2] Vol. cxxiv, p. 516.

TUBERCULIN.

THE publication of Koch's last manifesto concerning tuberculin,[1] has called forth several opinions of this substance, and criticisms of Koch's work. Two of the more important of these, by Klebs [2] and Hueppe [3] form the basis of an editorial in the *Lancet* of November 14th.

Professor Klebs publishes a statement in anticipation of a more detailed work, in which he appears in the peculiar position of defending tuberculin against its own discoverer. Koch appears to believe that the injurious effects following large doses of tuberculin are due to the substance itself; whereas Klebs does not think so, and accounts for the fact that the same substance which acts curatively in animals produces injurious symptoms in man, by the explanation that animals are immune to the noxious elements of crude tuberculin. These injurious substances are, no doubt, alkaloidal in nature, and it is from these substances that Klebs has been trying to rid tuberculin. He has succeeded in extracting from the purified tuberculin of Koch the active substance without much admixture of these alkaloidal substances, and proposes to call

[1] See page 505 of the Journal.

[2] Deutsche. med. Woch., November 5th.

[3] Berliner klin. Woch., November 9th.

it "tuberculocidin." It is an albumose, and it, or its combinations with tannin or other participants, has an undoubted effect in tuberculosis, never exciting fever, and producing marked improvement. Hectic and night sweats disappear; signs of catarrhal process in the lungs, together with cough and expectoration rapidly diminish; appetite and body-weight increase. The bacilli in the sputum become granular, and less and less capable of receiving the staining reagents, and finally disappear.

Apparently neither Koch nor Klebs have taken any notice of the work in the same direction by Cheyne and Hunter, published last summer; in fact, Koch's paper has been widely criticised as containing a slight on all other bacteriologists.

Hueppe, among others, strongly protests against these "communications" of Koch's, and asserts that the latest of them contains nothing that had not been independently shown by others, whilst it does not go so far even as their work has in the isolation of the active principle of tuberculin. He quotes Professor Koch's earlier criticisms of M. Pasteur, against his own present methods of publication of his researches. And he might have added that no work of the French *savant* was ever produced with the air of mystery that did so much harm in the first announcements upon tuberculin. Finally, Dr. Hueppe deals severely with the accusations brought by Professor Koch against bacteriologists in general, and shows how ill-founded they are.

FRESH AIR IN AND ABOUT PUBLIC SCHOOLS.

At a stated meeting of the Medical Society of the County of New York, held November 23d, the following resolution offered by Dr. A. Jacobi, was adopted:

"*Resolved*, That the Board of Health be requested to use both its actual authority and its moral influence to secure for the school children a sufficient amount of air, light and accommodation, and to protect them from the dangers to their health, unavoidable in the present condition of the public schools."

This resolution was presented in consequence of a report, made by Dr. Henry E. Chapin, from the Committee on Hygiene, in regard to the sanitary condition of the public schools of the city; this report being supplementary to a very complete one on the same subject a year ago. Dr. Chapin recently investigated some of the schools referred to in the former report to see if any improvement had been made, but found little ground for encouragement. One of the schools visited was found, in fact, in a worse condition than last year. The great trouble in regard to the matter Dr. Chapin believed to lie in the fact that the responsibility was divided between three distinct bodies, namely, local boards of trustees, the Board of Education, and the Board of Estimate and Apportionment. While each had school functions to perform, not one of them had absolute power to originate and carry out needed reforms. In order to remedy this state of affairs he suggested that it might be well to call in the assistance of the Board of Health, which was entirely independent of the other bodies mentioned, and he thought it would be wise to have a State law passed authorizing the Board of Health to exercise a constant sanitary supervision of the schools. Under such a law any defect in a school building could be promptly investigated by the Board of Health, and its recommendations for improvement should be made mandatory upon the body that should be found responsible. In case such recommendations were not acted upon within a reasonable time the Board of Health should have the power to close the school.

At a public meeting under the auspices of the newly organized "Union for Concerted Moral Effort," held on Thanksgiving night, a petition was drawn up and circulated, urging the necessity of more parks in the over-crowded districts of the city. It was addressed to the Board of Street Opening and Improvement of the City of New York, and called attention to the fact that under the existing laws this body had ample power to act in the matter. It also referred to the report on the subject made by the Board of Health in 1887, an extract from which reads as follows: "The school-houses of the city probably permit the best general indications for the location of parks of this character. Their number and situation are in great degree determined by the density of the population, and in tenement-house districts they are generally surrounded by high buildings which interfere seriously with their proper lighting and ventilation. It is difficult to overestimate the advantage that would accrue to the city if it were made a matter of permanent policy to surround each public school building with a park of such dimensions as the circumstances of the case might warrant."

MEDICAL NOTES.

Influenza, which for some weeks has been prevalent in several districts in different parts of Europe, is now reported from different parts of the United States.

Medical Mayors. — Fourteen cities in the United Kingdom have chosen medical men for mayors for the next year, among them Manchester, Stratford-on-Avon, Bristol and Edinburgh.

Ether Intoxication. — A death in Paris, from ether taken as an intoxicant, has called attention to a habit which seems to have become prevalent recently in that city, of mixing ether with cognac as a beverage.

Small-pox in Canada. — On account of the prevalence of small-pox in parts of Canada, the Marine-Hospital Bureau, having received a request from the Governor of Michigan, have established medical inspection of emigrants at Detroit and Port Huron.

Dr. E. Von Esmarch, son of the distinguished surgeon of Kiel, has been appointed Professor of Hygiene in the University of Königsberg, in the room of Prof. C. Frænkel, who recently accepted a call to Marburg.

THE UNITED STATES MEDICAL PRACTITIONERS' PROTECTIVE ALLIANCE. — The *Maryland Medical Journal* warns the medical profession editorially against this association, which has recently received a lengthy endorsement in the *Medical News*. "According to the published statement of the Medical and Chirurgical Faculty of Maryland, the 'founder' was expelled in April, 1890, from the State Medical Society of Maryland, for violation of its code of ethics (identical with the code of the American Medical Association); the offence, which is not there stated, being that he advertised himself in the daily papers, giving as an endorsement his membership in the Faculty, and refused to discontinue advertisement. The 'President' of this 'Alliance' is now Medical Director of the 'National Bureau of Medical, Surgical, and Hygienic Relief of Baltimore City,' the successor and heir of the 'Bureau of Medical Relief," whose principles and practices are utterly condemned by all physicians of standing in Baltimore with whom we have conversed on the subject. We judge that this 'Alliance' collects from its members a membership fee ($3); we cannot see what return it can possibly make for the investment."

THE ILLNESS OF PRINCE GEORGE OF WALES furnishes another popular clinical history of typhoid fever, which has been given in full in the English daily press. He first had headache on November 9th, and the disease was recognised on the 11th. Rose spots appeared on the 16th. The English royal family appear to be particularly liable to typhoid fever. The Prince of Wales had a very severe attack nineteen years ago, and the Prince Consort died of it thirty years ago. The Irish oysters, which were suggested as the source of the disease in Prince George's case, have since been vindicated.

THE AUSTRIAN MEDICAL CHAMBER. — A new council, to be called the *Aerztekammer* has been established by Act of Parliament in Austria. It will examine the character and conduct of its members, expunging names after sufficient testimony; it will also regulate the fees of medical men and lay down laws for the profession respecting benefit societies, insurance examinations, etc. Different medical societies have been endeavoring to have such a council created for the last twenty years.

SUICIDE OF CHILDREN IN BERLIN. — During the last fourteen months sixty-two suicides have been committed in this city by minors. Of these twenty-four were fifteen years old, fourteen had reached the age of fourteen, nine that of thirteen, seven of twelve and one of seven. Disappointed ambition and the fear of punishment are assigned as the causes of these acts.

CHILD MARRIAGE IN INDIA is said by a writer in the *Indian Appeal* to have had its origin at the time of the Mohammedan invasion. Conversion to Islam was the principal object of the Mussulman conquerors, and to facilitate this they began to marry by brutal force the girls of the Hindus. Cruel and oppressive as they were, they paid some respect, however, to the married Hindu women. To secure the safety of Hindu girls, the institution of early marriages became indispensable. Gradually the practice developed into a superstition among the old men and women of Hindu families, who think their hearts will not be consumed on the funeral pyre if death were to intervene before they witnessed the marriage of their grandchildren.

DISPENSARY ABUSE. — The *Hospital Gazette* publishes the following satire on London medical charities: "The Managers of the Metropolitan Hospitals, observing that there is no such speedy or effective means of securing public sympathy as a monster demonstration in Hyde Park, have organized an imposing procession. The date is not stated, but the following is to be the programme:

"ORDER OF PROCESSION. — 1. Mounted GATE PORTERS. 2. FATTON CHARITY BARNACLE, Esq., representing the Secretaries and Treasurers, in a carriage drawn by four horses. 3. The Charters of various Charities, carried by their respective SECRETARIES, stating that they were founded for the "Sick Poor." 4. The SICK POOR *in their own carriages*. 5. Detachment of HOSPITAL CHRONICS bearing banners inscribed with the words, 'Free Physic,' 'Why Pay Doctors?' 'Come to the Copper Dispensary,' 'Shake the Bottle,' 'Plenty of Lotion,' 'Full Diet,' etc. 6. SIX WATER CARTS loaded with Charity-Physic, which will play at intervals during the Procession upon 7. A detachment of ruined, or distressed, GENERAL PRACTITIONERS, accompanied by their care-worn wives and luckless offspring. 8. Staffs of 'Copper' and other DISPENSARIES. 9. HOSPITAL PHYSICIANS in carriages and pairs, each carrying an open umbrella inscribed with the words 'Under cover of a benevolent purpose.' 10. His Eminence, THE COLLEGE SKELETON."

GIFT TO THE QUINCY (MASS.) HOSPITAL. — The receipt of the sum of $5,000, to establish a free bed, from the family of the late Nathaniel H. Emmons, of Boston, has been acknowledged by the trustees of the Quincy Hospital.

Miscellany.

THE NEW KOCH INSTITUTE.

THE Berlin Society for Public Medicine held its first autumn meeting on October 26th, in the Koch Institute for Infectious Diseases, under the chairmanship of the Director of the Charité, Dr. Spinola.[1] In addressing the meeting, Dr. Spinola pointed out that the new Institute had appeared sufficiently important to the public health for the committee to make it desirable that the members should have an opportunity of inspecting it. Dr. Pfeiffer, the Director of the Scientific Department of the Institute, then gave an address, illustrated by means of electrical projections. He said the aim of the Institute was not limited to the study of tuberculosis, but to the discovery of effectual means of treating all infective diseases. Most exciters of disease belonged to the class of bacteria, of which many were already known. But there were a number of diseases of which the exciter was still unknown. These diseases would be systematically investigated, and it was to be hoped that unexpected discoveries would be made in regard to them. When we knew the exciters of these diseases, it would be the next aim to discover their vital conditions; It must also be determined through what channels they entered the system and how they spread themselves. If they

[1] Medical Press, November 11th.

succeeded in bringing about the still mysterious immunity, a great step in advance would have been made, and here also the subject was one not entirely conjectural.

Cure was not always brought about by way of immunity; sometimes spontaneous cure of tuberculosis took place. When substances were employed which in the animal organism excited the peculiar changes that led to spontaneous cure, one might hope for the cure in the human subject also. Tuberculin was undoubtedly such a substance, and it was being subjected to still further investigation. The Institute had lofty aims, and if Koch's discoveries resulted in no more than its foundation, his labors had been sufficiently blessed.

DIURETIN.

Kress,[1] in a paper reviewing what has already been written on this drug, and describing in detail his own observations in a large number of cases, comes to the following conclusions. Diuretin is a true diuretic, increasing equally the fluid and solid constituents of the urine. Its action is due to a direct, unirritating influence upon the renal parenchyma; albumen does not appear in consequence of its action, and if already present in the urine its amount is not changed. The frequent favorable influence of the drug upon the organs of circulation is probably produced indirectly. The best results from its use are obtained in cases of acute and chronic diseases of the heart and kidneys, especially acute nephritis and uncomplicated valvular disease. Good effects may be expected in chronic nephritis, and myocarditis, whereas in simple serous effusions, as in tuberculosis, the drug is of no use.

Diuretin can be continued for a long time in large doses, two drachms a day, without any alarming secondary effects. The continued administration of the drug in cases of the above-mentioned diseases, does not decrease its diuretic action.

A similar series of observations is recorded by Pfeffer,[2] who strongly recommends diuretin, especially for cardiac dropsy and chronic renal disease. When compared with digitalis, however, diuretin is found inferior as a cardiac stimulant, while superior in its action on the kidneys. Pfeffer's conclusions in other respects resemble those of Kress.

JAUNDICE.

At the fourth Italian Congress of Internal Medicine, held in Rome in October, Professor Patella in his report on jaundice proposed the following conclusions:[3]

Neither the "hemafecal icterus" of Gubler, the "urobilin icterus" of Gerhardt, nor the "bilirubin icterus" of Tessier can be sustained.

Hematogenous icterus does not exist.

Nearly all the forms of jaundice seen clinically come under the hepatogenous form by resorption.

The mechanism of the production of some forms of icterus is very obscure — that is, the reasons *why* and *where* this biliary resorption takes place.

The physio-pathological conception of so-called catarrhal icterus, as maintained in the past, is no longer sufficient to explain the actual mechanism of its production.

The actual state of our knowledge of the bacteria of the intestinal canal and biliary passages does not authorize us to accept without reserve the infective origin of catarrhal icterus.

Chauffard's idea of its toxic origin — modified in accordance with the results of biologic chemistry and experimental studies on icterus — must be taken into serious consideration in catarrhal icterus, and especially in certain cases of infective jaundice.

Catarrhal icterus can be considered the first link of a chain which, starting from it, reaches to grave and lethal icterus. A plural etiology — a true multiplicity of pathogenic possibilities — must nowadays be given to infective jaundice.

The "morbus Weil," though belonging to this group on account of its clinical aspects, even in the absence of bacteriological or pathological demonstrations, merits, however, a special place, as etiologically specific. Is it bacteric or toxic?

Our present knowledge of biliary infection is incomplete and imperfect.

IMMUNITY AND INFECTION.

Dr. A. C. Abbott, in an interesting paper[1] on some of the more important contributions to medical literature on the subject of immunity, describes briefly the work recently done by several experimenters. As the result of this work, he offers the following as the present state of our knowledge of immunity and infection:

Of the hypotheses that exist for the explanation of immunity, that which assumes acquired immunity to be due to reactive changes on the part of the tissues has received the greatest support. Immunity is most frequently seen to follow the introduction into the body of the products of growth of bacteria that in some way or other have been modified. This modification may be artificially produced from the products of virulent organisms and then introduced into the tissues of the animal; or the organisms themselves may be so treated that they are no longer virulent, so that when introduced into the body of the animal they eliminate poisons of a much less vigorous nature than is the case when they possess their full virulence.

Immunity following the introduction of bacterial products into the tissues is not the result of the permanent presence of these substances *per se* in the tissues, or to a tolerance acquired by the tissues to the poison, but is probably due to the formation in the tissues of another body that acts as an antidote to the poisonous substance. This protecting proteid that is eliminated by the cells of the tissues need not of necessity be antagonistic to the life of the organisms themselves, but in some cases must be looked upon more as an antidote to their poisonous products.

In the serum of the normal circulating blood of many animals there exists a body that is capable, outside of the body, of rendering inert bacteria that, if introduced into the body of the animal, would prove infective.

In many instances, infection may be looked upon as a contest between the bacteria and the tissues, carried on on the part of the former by the aid of the poisonous products of their growth, and resisted by the latter

[1] Muenchener medicinische Wochenschrift, September 22.
[2] Centralbl. f. d. gesam. Ther., 1891. Parts viii and ix.
[3] Medical News, November 21st.

[1] Medical News, November 7th.

through the agency of proteid bodies normally present in their integral cells. When infection occurs it may be explained either by the excess of vigor of the bacterial products over the antidotal or protective proteids eliminated by the tissues, or to some cause that has interfered with the normal activity and production of these bodies by the tissues.

Phagocytosis, though frequently seen, is not essential to the existence of immunity, but is more probably a secondary process; the bacteria being taken up by the leucocytes only after having been rendered inert through the normal germicidal activity of the serum of the blood and other fluids of the body.

THE NEUROTIC CHARACTER OF INFLUENZA.

DR. JULIUS ALTHAUS, in a recent paper[1] on the neurotic character of the grip, says that the great varieties observed in the symptoms of the feverish attack of grip have induced a number of observers to assume three different forms of the disease: the nervous, catarrhal, and gastric variety. The author is, however, convinced that these three forms have not any different pathological characters, but that influenza is always a true nervous fever, the symptoms of which only differ as far as localization of the grippo-toxine in different areas of the nervous system is concerned, and that the three forms just mentioned are perfectly arbitrary, all the symptoms of the feverish attack of influenza are referable to irritant poisoning of a definite centre of the nervous system. Shortly after the visitation of influenza had commenced, a number of patients complained of severe forms of neuralgia, loss of power, and a general break-up of the nervous system, which they attributed to an attack of grip. Some of these patients had been in perfect health before, while in others a neurotic pedigree or a previous syphilitic infection, or some other constitutional fault could be clearly traced, upon which the subsequent nervous affection had, as it were, been grafted.

In comparing those nervous troubles which may be met with after such diseases as diphtheria, typhoid fever, scarlatina, small-pox, measles, erysipelas, and malaria with those seen after influenza, it soon became evident that as a powerful etiological factor of all kinds and forms of nerve disease influenza stands *facile princeps* among all infectious fevers. The only distemper which approaches grip in this particular quality is syphilis, which may also give rise to the symptoms of almost any nervous disease. A still further analogy between these two infectious diseases, is found in the circumstance that in both we may have a primary attack, secondary symptoms of a comparatively mild character soon afterwards, and tertiary affections of a more dangerous and obstinate nature, affecting the organic structure of tissues, at a more remote period.

Grip also seems occasionally to revive an old syphilitic infection which has lain dormant for years, and thus indirectly to give rise to certain diseases of the spinal cord, which are known to occur habitually on a syphilitic base. In comparing the degree of virulence of the two poisons, however, the author has found that when the grippo-toxine attacks the structure of organs, it often does so with far greater ferocity and in a more ruthless manner than the syphilitic virus. The question then arose whether the chief reason of this peculiarity might not be found in the circumstance that the distemper itself, in its primary manifestations, is not so much an infectious catarrhal fever, as has been generally assumed, as an infectious nervous fever. A clinical survey of the symptoms of the feverish attack rendered this, *primâ facie*, not unlikely, as many of them, such as headache, utter prostration of mental and bodily strength, delirium, coma, convulsions, etc., point unmistakably to the nervous system as their starting-point; while, on the other hand, catarrh of the mucous membranes and pneumonia have been completely absent in a large proportion of cases. Indeed, many patients have had influenza badly without having once coughed or squeezed.

The author refers to the evidence of the value of vaccination and revaccination in lessening susceptibility to the disease, and recommends, in case another outbreak seems imminent, that some provision be made for extensive revaccination of those exposed.

[1] Lancet, November 14th.

MENTAL DISEASE FOLLOWING INFLUENZA.

IN the *Deutsche Medizinal Zeitung* for September 3d and 7th, there are references to various recent articles on mental disturbances following influenza.[1] Two of these articles merely give an account of one or two isolated cases, but in the others there are records of more considerable numbers of patients who had developed a psychosis following on influenza. Some of those referred to by Dr. Jutrosinski[2] were observed in Professor Jolly's clinique in Strassburg. The conclusions in his paper are summarized as follows:

When mental disease is brought on by influenza, in the great majority of cases the patients are of neurotic temperament. The attack may come on in any stage of the influenza, but there appears to be a preference for the period of convalescence. In the majority of cases the symptoms were those of melancholia and hypochondriasis. Neither sex is specially liable. Most cases occur between twenty and fifty years of age. In the case of existing mental disease, influenza caused an aggravation in almost every instance.

With these statements may be compared the facts submitted by Dr. Mispelbaum.[3] He had patients of each sex, and of ages varying from sixteen to seventy. All of them had been for some time convalescent from the influenza attack, though suffering from lassitude and persistent sleeplessness. At the onset of the psychosis there was always acute delirium, of variable duration, which gave place, except in two cases, to a melancholia lasting for at least a fortnight. With Kraepelin, he does not consider that influenza of itself is sufficient to produce an insanity in a normal subject, but that there must always be other etiological factors. In any case, influenza must be considered along with other specific fevers which have mental diseases among their sequelæ.

Mispelbaum mentions other nervous diseases which he had met with after influenza (intercostal and supra-orbital neuralgias, and long-continued sleeplessness). He advises special care in treatment and observation of cases during the period of lassitude following influenza.

[1] Glasgow Medical Journal, November.
[2] Deutsche med. Woch., March.
[3] Allg. Zeitschr. Psych., Bd. 47, Hft. 1, 1890.

THERAPEUTIC NOTES.

Malaria. — Guttmann and Ehrlich[1] recommend chemically pure methyl blue in doses of a grain and a half five times a day between the periodic attacks of malaria. The treatment should be continued for a week or more after the disappearance of fever.

Diphtheria. — Gaucher[2] treats this disease as follows: The membranes are detached as far as possible with a piece of wood wound with cotton. The following is then applied to the raw surfaces two or three times:

℞ Camphor . . . . . 20 parts.
Olei ricini . . . . . 15 parts.
Alcohol absol. . . . . 10 parts.
Acidi carbolici . . . . . 5 parts.
Acidi tartarici . . . . . 1 part. M.

This acts as a caustic. The throat should then be frequently irrigated with a one per cent. carbolic solution if possible, otherwise with hot water or a weaker solution. This series is repeated every few hours.

Mercury in Typhoid Fever. — From a study of nearly 700 cases, Smakovsky[3] concludes that the simplest and most efficacious treatment consists in the administration of calomel in fractional doses. Three-fourths of a grain is given every hour for ten doses, if necessary, or till copious, soft, greenish stools have been secured, a gargle of chlorate of potash being meanwhile used to prevent stomatitis. In cases in which cardiac weakness already exists, an infusion of digitalis is used before the calomel. A second course of calomel may be given a day's interval after the first. During the interval and subsequently, the author prescribes:

℞ Subnitrate of bismuth . . . . gr. liss.
Pure naphthaline . . . . . gr. 3-10.
Sulphate of quinine . . . . gr. iss. M.
Sig. One powder. Four of these daily.

Hydrophobia.[4] — In order to determine whether the disease is really hydrophobia, the following method is recommended by a Chinese contemporary: Get a gong or any large brass utensil and strike it before the patient. If he is suffering from hydrophobia he will at once show signs of madness; then fan him with a large palm-leaf fan, and he will crouch down as if in great fear. When the presence of the disease is thus ascertained, the next step is to search the hair of the patient. There will certainly be found one hair of the color of vermillion, and rather stronger and coarser than ordinary hair. This particular hair should be entirely pulled out, not even the smallest part of the root must be left, otherwise the disease cannot be cured. When this has been done a prescription must be prepared, and the drugs used should be of such a nature as will expel the poison from the place in which it is.

Gelsemium for Colds. — Dr. Aulde[5] in an article on "A Bad Cold" recommends gelsemium. Ten drops of a reliable fluid extract (assayed), are dissolved in three ounces of water, and of this mixture the patient takes a teaspoonful every ten or fifteen minutes for an hour, then at less frequent intervals according to the effects produced. The plan is simple, the medicine harmless in the dosage recommended, and not at all unpalatable.

[1] Berliner Klin. Woch., No. 39.
[2] Münchener med. Woch., November 10th.
[3] L'Union Médicale, April 10.
[4] British Medical Journal.
[5] Medical Record, November 28.

METEOROLOGICAL RECORD,

For the week ending November 21, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches.
S...15	30.68	34	39	30	59	69	64	N.W.	S.E.	9	7	C.	C.	
M..16	30.41	46	57	35	77	88	82	S.	S.	10	24	O.	C.	
T..17	29.86	53	66	40	84	92	88	S.	W.	21	15	O.	N.	.62
W.18	30.32	34	38	30	56	58	57	W.	W.	19	12	C.	C.	
T..19	30.76	32	40	23	59	63	61	W.	S.	10	9	C.	C.	
F..20	30.61	42	51	32	62	74	68	S.W.	S.W.	10	10	O.	C.	
S..21	30.51	44	51	38	84	92	88	S.W.	S.E.	1	12	G.	F.	
☞	30.45	41	49				73							.09

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

For the Week ending Saturday, November 21, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York . .	1,515,301	714	253	15.12	20.44	2.94	1.40	5.16
Chicago . . .	1,099,850	425	146	19.68	14.16	1.20	7.68	6.48
Philadelphia .	1,046,964	—	—	—	—	—	—	—
Brooklyn . .	806,343	308	99	15.18	18.15	1.32	1.65	8.58
St. Louis . .	451,770	—	—	—	—	—	—	—
Boston . . .	448,439	182	49	9.90	16.50	.55	2.75	4.40
Baltimore . .	434,439	181	54	14.30	28.05	1.10	2.20	6.15
Cincinnati . .	296,908	114	40	58.08	44.88	3.52	1.76	7.92
Cleveland . .	262,000	87	42	27.37	10.90	2.28	2.38	19.04
New Orleans .	242,039	—	—	—	—	—	—	—
Pittsburg . .	240,000	—	—	—	—	—	—	—
Milwaukee . .	240,000	87	37	28.56	16.66	1.19	—	16.66
Washington . .	230,392	91	20	18.70	9.90	—	4.40	12.10
Nashville . .	76,168	38	10	15.78	10.52	—	7.89	2.63
Charleston . .	65,165	38	13	2.63	7.89	—	2.63	—
Portland . . .	36,425	10	1	10.00	—	—	10.00	—
Worcester . . .	84,655	24	11	8.32	20.80	—	—	—
Lowell . . .	77,696	18	6	16.66	5.55	11.11	5.55	—
Fall River . .	74,398	23	6	13.05	13.05	8.70	—	—
Cambridge . .	70,028	36	6	8.34	22.24	8.34	—	—
Lynn	55,727	24	5	12.48	16.66	4.16	4.16	4.16
Lawrence . . .	44,654	22	7	22.75	9.10	9.10	4.55	9.10
Springfield . .	44,179	11	2	9.09	18.18	—	—	9.09
New Bedford .	40,733	6	3	16.66	16.66	16.66	—	—
Salem	30,801	9	1	—	—	—	—	—
Chelsea . . .	27,909	20	9	20.00	5.00	—	5.00	15.00
Haverhill . . .	27,412	5	1	—	20.00	—	—	—
Brockton . . .	27,294	—	—	—	—	—	—	—
Taunton . . .	25,445	2	0	—	—	—	—	—
Gloucester . .	24,651	3	1	—	—	—	—	—
Newton . . .	24,379	9	3	—	11.11	—	—	—
Malden . . .	23,031	12	1	—	16.66	—	—	—
Pittsburg . . .	22,037	9	2	—	22.22	—	—	—
Waltham . . .	18,707	6	0	—	—	—	—	—
Pittsfield . .	17,281	6	1	16.66	50.00	—	—	—
Quincy . . .	16,723	3	1	33.33	—	—	—	33.33
Newburyport .	13,947	7	1	14.28	42.84	—	—	14.28
Medford . . .	11,079	2	0	—	—	—	—	—
Hyde Park . .	10,193	4	0	50.00	—	—	50.00	—
Peabody . . .	10,158	2	1	—	—	—	—	—

Deaths reported 2,539: under five years of age 832; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 308, acute lung diseases 434, consumption 288, diphtheria and croup 175, typhoid fever 75, diarrhœal diseases 51, scarlet fever 50, whooping-cough 15, cerebro-spinal meningitis 11, malarial fever 10, measles 7, erysipelas 4.

From scarlet fever New York 15, Chicago 10, Milwaukee 8, Brooklyn 6, Baltimore 5, Boston 2, Cincinnati, Nashville, Worcester and Pittsfield 1 each. From whooping-cough New York 6, Chicago, Boston and Baltimore 2 each, Brooklyn, Cleveland and Milwaukee 1 each. From cerebro-spinal meningitis Chicago 4, New York and Washington 2, each, Cleveland, Worcester and Lynn 1 each. From malarial fever New York 4, Brooklyn and Baltimore 2 each, Cleveland and Nashville 1

each. From measles New York 4, Chicago 2, Fall River 1. From erysipelas New York and Brooklyn 2 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending November 7th, the death-rate was 19.3. Deaths reported 3,486: acute diseases of the respiratory organs (London) 329, diarrhœa 95, fever 68, whooping-cough 65, measles 60, scarlet fever 38, diphtheria 34.

The death-rates ranged from 13.2 in Halifax to 28.6 in Sunderland, Birmingham 17.3, Bradford 16.8, Huddersfield 16.9, Hull 17.1, Leeds 19.1, Leicester 16.8, Liverpool, 26.1, London 17.9, Manchester 22.7, Newcastle-on-Tyne 23.4, Nottingham 15.9, Portsmouth 16.0, Sheffield 17.2, Wolverhampton 25.2.

In Edinburgh 21.9, Glasgow 27.9, Dublin 31.4.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending November 14th, the death-rate was 20.6. Deaths reported 3,707: acute diseases of the respiratory organs (London) 370, whooping-cough 109, measles 93, diarrhœa 66, fever 59, diphtheria 42, scarlet fever 30.

The death-rates ranged from 15.1 in Leeds to 33.0 in Sunderland; Birmingham 22.8, Bradford 16.3, Hull 17.9, Leicester 18.9, Liverpool 24.8, London 19.6, Manchester 27.9, Newcastle-on-Tyne 24.7, Nottingham 18.1, Salford 20.5, Sheffield 17.0.

In Edinburgh 26.1, Glasgow 29.5, Dublin 28.8.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM NOVEMBER 28, 1891, TO DECEMBER 4, 1891.

FIRST-LIEUT. PAUL SHILLOCK, assistant surgeon, U. S. A., is relieved from duty at Fort Yates, N. D., and ordered to Fort Grant, Arizona, for duty.

FIRST-LIEUT. WILLIAM N. SUTER, assistant surgeon, U. S. A., is relieved from further duty at Fort Grant, Arizona, and assigned to duty at Fort Bowie, Arizona.

CAPTAIN WILLIAM O. STEPHENSON, assistant surgeon, U. S. A., is relieved from duty at Columbus Barracks, Ohio, and will report in person to the commanding officer, Fort Niagara, N. Y., for duty at that post.

CAPTAIN ARTHUR W. TAYLOR, assistant surgeon, U. S. A., having been found incapacitated for active service by an Army Retiring Board, will proceed to his home.

Leave of absence for one month is granted CAPTAIN LOUIS M. MAUS, assistant surgeon, U. S. A.

The leave of absence granted CAPTAIN ROBERT R. BALL, assistant surgeon, U. S. A., is extended one month.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 5, 1891.

T. C. HEYL, surgeon, placed on the retired list, December 3, 1891.

W. H. JONES, surgeon, promoted to Medical Inspector, November 14, 1891.

FRANK ANDERSON, passed assistant surgeon, promoted to surgeon, November 14, 1891.

N. J. BLACKWOOD, assistant surgeon, from Navy Yard, League Island, Pa., and to the U. S. S. "Miantonomah."

LEWIS MORRIS, assistant surgeon, ordered to the Navy Yard, League Island, Pa.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING NOVEMBER 28, 1891.

VANSANT, JOHN, surgeon. Leave of absence extended ten days. November 27, 1891.

HAMILTON, J. B., surgeon. Detailed for special duty. November 25, 1891.

IRWIN FAIRFAX, surgeon. To proceed to Cape Charles Quarantine, for duty. November 25, 1891.

CARTER, H. R., passed assistant surgeon. To proceed to Savannah, Ga., for temporary duty. November 19, 1891.

BANKS, C. E., passed assistant surgeon. To proceed to Boston, Mass., for special duty. November 9, 1891. To proceed to Washington, D. C., on special duty. November 24, 1891.

KALLOCH, P. C., passed assistant surgeon. Relieved from duty at San Francisco, Cal., ordered to Boston, Mass. November 20, 1891.

WHITE, J. H., passed assistant surgeon. To proceed to Harris Neck, Ga., for special duty. November 17, 1891.

CARRINGTON, P. M., passed assistant surgeon. To proceed to Harris Neck, Ga., for special duty. November 19, 1891.

WILLIAMS, L. L., passed assistant surgeon. Granted leave of absence for twenty-nine days. November 14, 1891.

PETTUS, W. J., passed assistant surgeon. Relieved from duty at Cape Charles Quarantine; ordered to Buffalo, N. Y., for temporary duty. November 25, 1891.

PERRY, T. B., passed assistant surgeon. To rejoin station at Baltimore, Md. November 19, 1891.

COBB, J. O., assistant surgeon. Granted leave of absence for twenty-one days. November 13, 1891.

YOUNG, G. B., assistant surgeon. To proceed to Memphis, Tenn., for temporary duty. November 13, 1891.

SOCIETY NOTICES.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held on Monday, December 14, 1891, at the Medical Library, 19 Boylston Place, at 8 o'clock P.M. Dr. J. C. White: "Some Dangers of Infection Incidental to Professional Life." Dr. H. L. Burrell: "What is a Felon?" Balloting for candidates for membership will begin at 9 o'clock.

G. G. SEARS, M.D., *Secretary*.

MASSACHUSETTS MEDICAL SOCIETY, SUFFOLK DISTRICT. — The Section for Clinical Medicine, Pathology and Hygiene, will meet at 19 Boylston Place, on Wednesday, December 16th, at 7.45 o'clock P. M.

Papers: Dr. Walter Channing: "Casts of the Mouth and Palate in Idiots." Prof. Thomas Dwight, of Harvard University, will open the discussion.

Dr. V. Y. Bowditch: "The Establishment of Sanitaria for Pulmonary Diseases in the Immediate Vicinity of our Large Cities." Drs. F. I. Knight and A. L. Mason will open the discussion.

Pathological Specimens.

Refreshments after the meeting.

ALBERT N. BLODGETT, M.D., *Sec'y*, 390 Boylston St.

E. G. CUTLER, M.D., *Chairman*.

APPOINTMENT.

WILLIAM F. WHITNEY, M.D., has been appointed Professor of Parasites and Parasitic Diseases in the Harvard School of Veterinary Medicine.

RECENT DEATHS.

CHARLES D. SMITH, M.D., of New York, died December 4th, aged seven-seven. He graduated from the University of Pennsylvania in 1837. He served as surgeon during the war, and retired from practice shortly after its close.

HERBERT G. LYTTLE, M.D., of Long Island City, died December 1st, aged thirty-nine.

DR. IGNATIUS HIRSCHLER, a well-known ophthalmic surgeon and writer on diseases of the eye, died in Buda Pesth, November 11th, aged sixty-eight.

DR. HENRI ROGER, a distinguished physician of Paris, died recently aged eighty-two. He was made president of the Académie de Médecine in 1880.

THOMAS WHARTON JONES, F.R.S., F.R.C.S., a distinguished English physiologist, died November 7th, aged eighty-three.

BOOKS AND PAMPHLETS RECEIVED.

Proceedings of the New York Pathological Society for the year 1890.

The Seventieth Birthday of Virchow. Celebration in the Johns Hopkins University.

Who can be Medical Experts? By Henry A. Riley, Esq., of New York. Reprint. 1891.

Is a Child Viable at Six and a Half Months? By Llewellyn Eliot, M.D., Washington, D. C. Reprint. 1891.

Cookery for the Diabetic. By W. H. and Mrs. Poole, with preface by Dr. Pavey. London: Longmans, Green & Co. 1891.

Transactions of the Ophthalmological Section of the American Medical Association at the forty-second meeting, held at Washington, D. C., May 5-8, 1891.

The Supreme Passions of Man; or the Origin, Causes, and Tendencies of the Passions of the Flesh. By Paul Paquin, M.D. Battle Creek, Mich.: The Little Blue Book Co. 1891.

A Vegetable Plate: also a New Technique in Intestinal Anastomosis. By Robert H. M. Dawbarn, M.D., Professor of Surgical Anatomy and Operative Surgery, New York Polyclinic.

The Bilateral Pareses and Pseudo-Plegias of Childhood, with Special Reference to a Type of Malarial Origin. The Arrangement of the Supra-Cerebral Veins in Man, as Bearing on Hill's Theory of a Developmental Rotation of the Brain. By William Browning, M.D., Brooklyn, N. Y. Reprints. 1891.

Address.

THE PRINCIPAL TYPES OF PHYSICAL TRAINING COMPARED.[1]

BY EDWARD MUSSEY HARTWELL, PH.D., M.D.,
Director of Physical Training in the Public Schools of Boston.

At our first meeting, I stated that the aim of these lectures was a practical and pedagogical one, namely, to set forth the teachings of experience and science touching the nature and effects of physical training in support of my main contention that it is not only wise and desirable, but necessary and practicable as well, to make bodily exercise an integral and co-ordinate part of the elementary and higher education of American youth of both sexes. Attention was called to the pronounced interest evinced by this community in matters pertaining to bodily exercise and education, and to the forms in which that interest was most striking and manifest: (1) In the field of athletic sports; (2) in the field of discussion and controversy; and (3) in the field of gymnastics and drill. Emphasis was laid upon the fact that, although the interest in question had marked local characteristics, this apparently circumscribed and distinctively "Boston Movement," was, in truth, only a part of a wider, general movement embracing other parts of this country and many parts of Europe — the fact being that educational authorities have been put upon the defensive, all over the civilized world, by reason of the alarming results of their inability, or unwillingness, to modify their methods in accordance with the plain teachings of experience and of modern science as to the interdependence of body and mind.

At our later meetings we have considered the more salient features of what may be denominated the most representative and typical forms of physical exercise or training. These are five in number and may be styled: the Grecian; the Mediæval; the British; the German; and the Ling or Swedish. We have also discussed the nature and effects of muscular exercise, from the standpoint of modern physiology, in order to secure a standard or criterion, by which to estimate the hygienic and educational value of any particular system of exercise.

In comparison with the five main types or national systems of exercise, mentioned above, all other schemes and so-called systems of physical education, seem to me, to be fragmentary, anomalous, and insufficient. Provided we apprehend the lessons of experience and the teachings of science with regard to the essential character and comparative worth of the results attained by each of these national systems of bodily education, we shall be able to classify and criticise, with approximate justness, the numerous varied, and often fantastic, new and local schemes of exercise, whose inventors and partisans are on every hand clamoring loudly and insistently for recognition and patronage. I shall not consider them further, as it is not my purpose in these lectures to attempt to bolster up or pull down any local idol that has gained a hierarchy or worshippers for itself, either in this city or in the country at large.

A twofold comparison of the systems whose origin and more obvious external features have thus far occupied our attention, seems to me to be desirable. I propose, therefore, to compare them, in the time which remains to me, first from the historical point of view, in order to discover the place and influence attained by the five typical systems in the life and history of those nations which have originated or adopted them; and in the second place, to compare them as regards their fitness to realize the true ends of bodily education, taking as my criterion so much of the modern doctrine of the nature and effects of exercise as seems necessary for my purpose.

It will be convenient to use the terms *agonistic*, *gymnastic* and *athletic*, in speaking of the most general features of the five types of physical training under review, these terms being derived from Grecian usage. An ἀγών, you remember, meant originally an assembly, then an assembly to witness a contest of some sort. For instance, the Olympic games were gymnic *agones*, being so-called because the contestants in them were naked; then there were musical and hippic *agones* also. The prizes given to victors in an ἀγών were termed ἆθλα, and an *athlete* was a winner or contestant simply; later, in its worse sense, an *athlete* was a *prize-fighter*, governed by professional and mercenary ends. A gymnast was a trainer primarily, especially after the agonistic games had become systematized and regulated, and were practised as a necessary part of the education of every free-born youth.

Greek physical training was, then, *agonistic*, during the period of its growth, when its main purpose was to afford sport or pastime; it was *gymnastic* during the period of its best estate, about the time of Pericles, when its aims were distinctly educational and ethical; and it became *athletic*, in the worse sense of the word, during the decadence of the institutions and independent life of the Greeks when a spirit of mercenary self-seeking and professionalism dominated both gymnasts and athletes.

Using these terms, in the sense above indicated, we should call the martial exercises of the ancient Gauls and Teutons, agonistic. Out of these sports and exercises were developed the physical training of the young page and squire, and the chivalric tournaments and jousts to which the knights of Italy, France, Germany, England and Scandinavia were so devoted in feudal times. That training and these contests were partly agonistic and partly athletic in their nature. The same terms may be applied to British sports. They were agonistic and have become chiefly athletic, within the last seventy-five or one hundred years. Athleticism is the dominant note in all British physical training, which has but little of pedagogical aim or method in it, and is less deserving of being called gymnastic than was the mediæval kind of physical training. German turning is somewhat agonistic in its nature, though its aims and methods are in the main gymnastic. No system of physical training, ancient or modern, so well deserves the name of gymnastic as the Swedish system, which has, perhaps, too little of the athletic element in it. In the Swedish gymnastics, moreover, we find medical gymnastics more highly developed and accorded a higher place than in any other system of physical training. Indeed, excepting the Grecian, there is, properly speaking, no system of medical gymnastics, worthy the name, to be found outside of the Swedish gymnastics.

Taine has well said, in his "English Notes," "In every age, under every civilization, a people is always

[1] The substance of this article was delivered on May 9, 1891, as the last of Six Hemenway Lectures on Physical Training, by the writer, at the Old South Meeting House, Boston.

itself. Whatever be its dress, goat-skin, blouse, gold-laced doublet, black dress-coat, the five or six great instincts which it possesses in its forests follow it in its palaces and offices." Of these great instincts, the play instinct is one of the most ineradicable. To this instinct of the barbarian and the child, as to a primitive germ, we may trace more or less directly every national or tribal system of bodily training. Ball-games, contests in running, jumping, lifting and casting of weights, hurling a tree-trunk or a beam and wrestling, are sports which have never ceased to be practised in one form or another, as popular pastimes and means of exercise from Homer's time to our own.

In many an out-of-the-way corner of Europe, especially in remote islands and secluded mountain-districts, you may find to-day one or another of the ancient pastimes still popular and played according to immemorial custom,— often on the anniversaries of ancient heathen festivals, which the Church has never been able to render wholly Christian, although most of them have been duly christened. The ancient sports have undergone least change in such regions as the Scottish Highlands, the Lake Country of England, outlying districts such as Friesland and Gothland, and the valleys of the Alps, Tyrol and Pyrenees.

If we attempt to trace our typical systems of physical exercise to their original forms, we find them beginning either in childish plays, or in games which are akin to such plays. The Grecian gymnastics and athletics developed directly out of such pastimes as Ulysses and Ajax engaged in around the funeral pyre of Patroclus which Achilles instituted in honor of his playmate and comrade. Jahn adopted several of the ancient German games in his turning system, and Ling wrote about the sports of the ancient Norsemen, though he gave them no very prominent place in his gymnastic system. British sports are the most highly developed modern expression of the play instinct. It is a significant fact that French, Swedish and even some German educators are now endeavoring to domesticate British sports, in order to incorporate an athletic element in their more systematic and refined forms of physical training; though it has been truly pointed out by foreigners, that "English school-boys play at their work, and work at their play," when judged by continental standards.

The words play and exercise were quite synonymous in the early days of our English speech, the ancient Teutonic word *plega*, play, being applied to all sorts of warlike exercises. For instance, we find it in such forms as *linden-plega*, play of shields, *sweardu-plega*, sword-play. The Anglo-Saxon translated the Latin *gladiator* into *plegere* or *plegeman*, meaning player. In Bede's "Ecclesiastical History," one finds that the priest was forbidden to hunt, hawk, or dice, but was charged "to play with his book, as became his condition." In the time of Henry the Eighth, "plaienge att weapons" was still a necessary branch of the education of young noblemen. Sword-play and cudgel-play still retain their ancient meaning of practice as well as of amusement.

Hodgetts, in his "The English in the Middle Ages," recounts the story, given in the "Edda," of the death of Baldur, the sun-god, by means of an arrow made of mistletoe, on which the traitorous Loki was sitting in the shape of a white crow, at the time Nanna, the bride of Baldur, obtained the promise of all nature, but the mistletoe, not to injure her spouse. So, when the gods of Valhalla instituted a game, which consisted in throwing their spears, javelins and arrows at Baldur, who was placed with his back against the holy-tree, that is, the holly-tree, Loki managed to have Höder, the blind twin-brother of the shining one, shoot the arrow of mistletoe at Baldur, who was unscathed by the missiles of the other gods. Baldur was killed by the arrow of mistletoe, which had first transfixed the cock, which flew up to intercept the arrow, and has been sacred to Baldur ever since.

"I only refer to this myth," said Hodgetts, "to show you where to look for the origin of the early English or Anglo-Saxon archery games, their casting the bar and javelin at a figure armed as a warrior, and the custom of shooting at the cock at Easter." Cock-throwing was, till rather recent times, I may add, a customary game among British school-boys at Shrove-tide.

The old English custom of playing certain games in the church-yard, and even the church itself, had doubtless a pagan origin. Among certain "Instructions for Parish Priests," dating from the middle of the fifteenth century, we find one with regard to profanation "wyth-ynne chyrche seyntwary," which runs as follows:

> "Songe and cry and suche fare,
> For to stynte thow schalt not spare;
> Castynge of axtre and eke of ston,
> Sofere hem ther to vse non;
> Bal and bares and suche play,
> Out of chyrcheyorde put a-way;
> Courte holdynge and suche maner chost,
> Out of seyntwary put thow most."

Archery, under the name of artillery was for many centuries a common exercise in England, being particularly protected by statute, even as late as the time of Henry VIII, when every village and many schools had butts for archery practice. In a law of Richard II, passed in 1388, it is enacted that "Servants and Labourers shall have Bows and Arrows, and use the same the Sundays and Holydays, and leave all playing at Tennis or Football and other games called Coits, Dice, Casting of the Stone, Skittles, and other such importune Games." Though the above contains no mention of church-yard games as such, it was held, long after the reign of Richard II, that "The Lord of the Manor may not, by custom, plough or break up two acres of land lying near the church, because it was anciently granted for the recreation of the youth, after evening service on every Lord's Day." King James I, being a hater of Puritanism and its kill-joy tendencies, in 1618 issued a proclamation known as "The King's Book of Sports," in which he declared his pleasure to be, "that after the end of Divine Service our good people be not disturbed, letted or discouraged from any lawfull recreation, such as dancing, either of men or women. Archery for men, leaping, vaulting, or any other such harmless Recreation, nor from having May Games, Whitson-ales, and Morris-dances, and the setting up of Maypoles, and other sports therewith used, so as the same be had in due and convenient time, without impediment or neglect of Divine Service." In 1633 Charles I reissued the "Book of Sports."

All this seems to indicate that old English sports, at least in pagan times, had originally a relation to public worship, somewhat similar to that of the Greek games, to funeral sacrifices and other acts of worship.

Although differing widely in most respects, the Grecian and British types of bodily education are alike in being devoid of any admixture of elements acquired through imitation or borrowing. British sports reflect more fully, perhaps, than any modern system of physical training, the national spirit of their devotees. In them we find clearly mirrored certain traits of British character, such as marked individualism, ruled by tradition and ancient custom; a dislike of theoretical and ideal aims; a liking for strenuous exertion and violent methods; a marked tendency to contentiousness; and a preference for what is concrete and resistant. They are the necessary, inherited, pastimes of a manly, vigorous, self-sufficient folk; and have never fully outgrown or lost their primitive, not to say pagan, characteristics. They have been followed largely for their own sake, and have suffered but slight modifications through the efforts of innovating educators and thinkers: in this respect presenting a marked contrast to German Turning and Swedish Gymnastics, which, though they bear the impress of national feeling, have been developed chiefly of set purpose, on the part of their promoters, either as a means of national regeneration, or as a remedy for over-refinement and the deteriorating effects of sedentary and urban life. Such modifications as are inevitable in British sports, are due mostly to efforts to make them more social and general, in short, — more truly popular. Then, too, the English climate is singularly favorable for the pursuit of athletic sports. The summer is so cool and the winter usually so mild in England, that there are comparatively few days in the year when one may not, if he will, engage in out-of-door games of some sort. Indeed the climate, more than most climates, acts as an incentive or provocative to active exercise. Muscular activity is more conducive to comfort, than is quiescence or loafing, in most varieties of English weather. Riding is always in season. Football is practicable not only throughout the autumn and winter, of ordinary winters, but far into the spring. Rowing may be practised more than three-quarters of the year. Cricket, being dependent on the state of the turf, is little played but in the spring and summer.

The English public schools are peculiarly adapted to serve as the nurseries of national pastimes. The oldest of them, Winchester and Eton, were originally ecclesiastical foundations, and have served, in a measure, as models for most of the later foundation schools, which, as a class, have departed less widely from their mediæval prototypes than have the secondary schools on the Continent. In England the public schools, which are boarding schools for boys from ten or twelve to nineteen years of age, enjoy a practical monopoly of secondary education. On the Continent, if we except the French Lycées, high class boarding schools are the exception. Moreover, the continental standard of intellectual training is higher and the methods of instruction more exacting and severe, so that pupils in a German, Swiss or Scandinavian *Gymnasium* or in a French *Lycée*, have much less freedom and leisure than boys at Eton, Rugby, or Winchester, where the half holidays average three a week. Force of public opinion generally, and often the rules of the school, oblige the English boy to take part in the school games. Owing to the combined influence of tradition, public opinion, and the peculiar organization and government of the schools and universities which set the tone in the athletic world; British interest in British sports, by reason of its universality, intensity and intelligence, stands alone. Though teachers and governing boards are sympathetic and helpful, as a rule; British athletics, as an institution, have been shaped chiefly by successive generations of boys and "Old Boys" as public-school graduates are wont to be called. The British boy has forced his masters to give him time and space for his games, — often at the expense of the course of study. It is doubtful if school and college athletics will ever be properly managed in this country, before a generation of teachers, presidents and trustees shall arise who have enjoyed the advantages of athletic training in their youth.

It is quite impossible for me to undertake to trace, within the limits at my disposal, the remarkable growth and transformation of certain sports, even in the single field occupied by the great English schools; or to note the influences which have served to intensify and spread the revival in athletics, which had its beginnings just after the close of the Crimean War and at the inception of the Volunteer movement in 1860; or to account for the changes due to the leaps and bounds with which athletics have advanced and are still advancing in England and Scotland. Even, to attempt to convey an idea of the extent to which boys and men of all classes engage in the three great British games of foot-ball, cricket and rowing, not to speak of lawn-tennis, hare-and-hounds, bicycling and the sports technically known as track-athletics; or of the amount of money contributed by the favored classes, in order to provide the sons of toil, as well as themselves, with play-grounds, swimming-baths, and gymnasia, would take me too far afield. I must content myself, therefore, with directing your attention to the fact that many of the sports now in vogue were considered vulgar and were played but little, even by school-boys a century ago; that strength and endurance rather than skill and address are the qualities most prized and worked for; that British sports are eminently social and are less marked by class distinctions than formerly; and that more interest is shown in contests between teams and clubs than in matches between individuals.

Demeny, a French physiologist, and a member of the commission appointed by his government to devise a rational code of gymnastics for use in the schools of France, urges most forcibly that athletic sports do not and cannot constitute a complete physical education. I hold this to be true of British, as of all athletics; but Demeny's further statement, that, "Games and sports are still what they always have been — an elegant means of amusement, an agreeable form of exercise, the privilege of the easy class, the pleasure of the smallest number," seems to me less applicable to the sports and games of Britain than to those of every other country. Indeed, the scope of all forms of modern physical training is wider and more truly popular than was the case in either feudal or ancient times, inasmuch as members of the privileged classes only were allowed to take part in the Grecian games or the brilliant mimic warfare of the mediæval tournaments. The sports of the Roman arena, in which the contestants were mostly slaves or prisoners of war, do not constitute a real exception to this statement, since the Roman gladiators and athletes were, like our base-ball players and circus acrobats, mere professionals whose function was to amuse the populace.

Team-matches and class exercises are distinctly

modern inventions; the prizes in most forms of ante-modern contests being adjudged to individual victors. There were, to be sure, certain games among Grecian youth in which "sides" strove with each other; and, in the knightly tournaments, squadron charged squadron in the lists; but these, like the ancient foot-ball and hockey games, in which parish fought against parish, were rather mass than team contests, since the sides were at best only rudely organized, and there was little or no division of labor among the contestants. Team athletics, I repeat, have reached their highest development in cricket, base-ball, foot-ball and rowing, in comparison with which the class exercises of the Swedes and Germans, which oftentimes involve the simultaneous action of large numbers of persons, are unspecialized.

As regards length of days, British sports come next to the Grecian games, even if we do not venture, as does Hodgetts, to date them from the games of the Aesir in Valhalla. The tournaments and jousts of the Middle Age lasted scarcely 400 years; German turning took its rise in the last quarter of the last century; Swedish gymnastics have not reached their ninetieth birthday; but the history of the Grecian games extends over nearly 1400 years, from the days of Homer, if there were a Homer, till 394 A. D., the date assigned to the last celebration of the Olympic games.

In the breadth and sanity of its aims; in the magnitude of its proportions and the completeness of its development, as a national institution; in the perfection of its organization; in the splendor and solemnity of its festivals; in its many-sided and abiding influence; as well as in the length of its history and the brilliancy of its record, the physical training of the Greeks has no parallel. Its history forms a coherent whole, presenting well-marked phases of growth, culmination and decay, and reflects at every stage the spirit of the nation. Athletic contests entered into the worship of Greek gods and heroes; and the lapse of time was reckoned in Olympiads to mark the recurrence of the principal sacred games. Gymnastics were assigned an enlarged and honorable place in the training, for peace and war, of every free-born boy and youth. The codes of Lycurgus and Solon provided for the organization and regulation of bodily training, and the management of it, during its best estate, afforded positions of honor and emolument to distinguished and ambitious men. It furnished themes for poets, philosophers and historians; sculptors and painters sought the palæstra and gymnasium for their fairest models; and even the greatest of Greek physicians thought it no condescension to study and adopt exercises and procedures which had been originated by paidotribes and gymnasts.

(To be continued.)

THE efforts of the Rhode Island Board of Agriculture to stamp out tuberculosis in the dairy herds of that State are made under the authority of a statute recently enacted, which provides that the State shall pay for animals condemned and killed. This provision encourages the farmers to point out the tuberculous cows in their herds for the information of the board. Thus far the board has killed fifteen cows, and thirty-four more are in quarantine and under observation. Diseased animals have been found in four or five towns, and milk from the herds in which they were discovered has been sold in Providence.

Original Articles.

NOTES ON THE EXPERIENCE OF PHYSICIANS IN BOSTON AS REGARDS THE QUESTION OF OÖPHORECTOMY FOR NERVOUS SYMPTOMS.[1]

BY JAMES JACKSON PUTNAM, M.D.

As the problems suggested by the question before us are mainly clinical, I have thought that the best contribution I could make, would be by collecting the unpublished cases occurring in the practice of Boston surgeons, and indicating their opinions so far as possible.

With this intention I sent around a circular asking for cases of oöphorectomy done principally on account of general nervous symptoms.

If the circular had been more liberally worded it might have called out a larger number of cases, but the fact that the great majority of the gynecologists of the city answered that they had had no experience of the sort indicated, is of decided interest as showing the general estimation in which the profession in Boston holds the operation for the removal of normal ovaries on account of nervous symptoms, or even of diseased ovaries, except in response to distinct local indications.

It is certainly true that with our increased and increasing knowledge of neurasthenia and allied nervous states and their treatment, there has grown up a distrust of the theory of specific reflex causes and of royal roads to cure, a distrust well indicated by the approval with which Dr. Goodell's widely-read paper of two years ago was received.[2]

But we should not for the sake of the greater overlook the less. The conservative view seems to be the one which it is important to press upon general acceptance, but we should not forget the facts that make for the other side, and the group of cases here collected furnish some of these facts. It seemed to me a lack in Dr. Goodell's paper, that he did not sufficiently recognize that the causes of neurasthenia are apt to be multiple, and that peripheral irritations, though rarely the chief cause, may count for a good deal.

It is not always possible to estimate the share that a peripheral irritation has in making neurasthenic tendencies manifest; it is not always possible to treat the case under the general conditions necessary for success: finally there are nervous systems which are not easily reached by other treatment, but can be given a new tone by some striking influence. Perhaps for some of these, hypnotism or some other form of treatment by suggestion would do as much good as oöphorectomy. In two of Dr. Johnson's cases, for example, the patient improved a good deal, though only a mock operation was done.[3] But the physician must use his most conscientious and enlightened judgment in each case, not forgetting that each patient stands for herself and not for an average.

Finally, we should not permit ourselves to be too much controlled by sentimental considerations in deal-

[1] Read at the recent Congress in Washington, as part of the discussion of Dr. Lusk's paper. See page 409, 1891, of the Journal; with a few subsequent additions.

[2] Medical News, 1889, vol. lv.

[3] Compare "The Curative Effect of Operations, *per se*" by J. W. White, Annals of Surgery, August, 1891. One of Dr. Johnson's two patients was informed that the operation had not been completed, and yet the favorable result occurred.

ing with the question of "unsexing" the patient. The function of child-bearing is not the only or most sacred function of every woman.

I have reports of twenty-six cases of oöphorectomy. Eleven of them were contributed by Dr. F. W. Johnson; eight by Dr. John Homans; five by Dr. J. W. Elliot, two of the latter being also under my care; one by Dr. E. W. Cushing; and one by Dr. J. R. Barss. Three of these had been published, but are reported again on account of later histories. Eleven of the patients appeared to have been benefited by the operation; thirteen were not benefited;[4] two died of some other cause rather too soon to make it worth while to include their cases.

This proportion of eleven favorable to thirteen unfavorable cases is, of course, of no statistical value, for we all know of cases enough where ovariotomy has been done in patients where nervous symptoms were present, though not on account of these nervous symptoms and without benefiting them.

Unfavorable results of serious character followed the operation in three cases, although in a number of others the nervous symptoms were temporarily worse, or symptoms like those frequently attending the menopause were induced. Of the three unfavorable results, two consisted in maniacal outbreaks of temporary duration, and one in an increase in the number of epileptic attacks. The operation in this case, however, was done only four months ago.

Dr. A. T. Cabot has told me of two other cases occurring in his practice where ovariotomy, which was not done for the sake of nervous symptoms, was followed, in one case by melancholia of many months' duration, and in the other by a shorter attack of mania, which ended in death on the third day. In this case the patient had shown delusions and other mental symptoms before the operation.

As such conditions occasionally follow other operations, though especially those on the genital tract, it would be hardly fair to attribute them to the loss of the ovaries in itself.

In three other cases of the group here presented, insanity came on a longer or a shorter time after the operation. It was, however, afterward learned, that mental symptoms had been present before the operation in every case.

In one of Dr. Homans's cases adhesions within the peritoneal cavity, consecutive to the operation, seemed to be the cause of considerable pain, which was increased by walking. After about a year the patient had a sudden sensation as of something giving way, and after the soreness subsided she was able to walk better.

In all the cases except one there were some signs or symptoms to call attention to the pelvic organs, and yet no such condition was present there as would have furnished sufficient surgical reason for operation.

The symptoms of chief importance were either of neurasthenic or hysterical character, or consisted in dysmenorrhœa and local pains,— local, but probably on a basis of the irritable weakness that we call neurasthenia. In three cases the treatment of uterine displacement, which had been previously impracticable, was made possible by the operation on the ovaries.

The majority of the ovaries and tubes were either perfectly healthy, although the nucleus for a certain amount of peritonitis, generally with adhesions, or they were somewhat enlarged, or more dense than usual, or the seat of retention cysts or dilated follicles, conditions liable, perhaps, to give rise to pain at menstrual periods,[5] but not likely to be important causes of serious symptoms except in the presence of a neurotic taint.

In some of the cases of this class it seemed almost certainly the bringing on of the menopause which induced the favorable result. It is this view which has been held to afford a justification for the occasional removal of ovaries which would be called strictly normal; and objectionable as it is to do this, if they are still capable of producing ova, yet it cannot be stigmatized as being absolutely unjustifiable or incapable of having a good effect.

The eight cases in which well-marked improvement occurred were briefly as follows. It should be said that the operation in one of them was done only six months ago, and in another only ten months ago, so that in these cases, and possibly in some of the others, the nervous derangement, hitherto latent, may reassert itself.

CASE I. This was the case of a young woman of eighteen, the youngest on the list. The operation was done by Dr. Homans, and the case — a very important one — has been reported both by him[6] and Dr. Goldsmith.[7] I should not refer to it here but for the fact that Dr. Homans has kindly given me new information, which brings the history up to seven years after the operation, at which time the patient died suddenly with intense pain in the head and convulsions, having remained well until then.

It was a case of so-called moral insanity of eleven years' standing, with outbreaks, especially at the menstrual period, of extreme violence. She was intelligent, but at times utterly uncontrollable and had been the inmate of several asylums, in one or another of which she seemed likely to spend her life. The improvement after the operation was so great that she went home to live, and after a time was able to support herself, which she continued to do until her death.

Dr. Johnson has also operated on a patient of eighteen, one of twins, with undeveloped uterus, who was neurasthenic and childlike. I do not count this case on the positive side, because the improvement did not begin for three years, though there are several reasons for attributing it to the operation, but the case is of interest because the patient developed physically and mentally, and from being childlike in appearance, manner and interest became more womanly and mature. There was a marked gain in flesh, as often occurs.

CASE II (Dr. Johnson). Single, thirty-one years old. Symptoms: Dysmenorrhœa; pain in left ovarian re-

[4] Since this was written Dr. J. W. Elliot has given me a later and more favorable report on a case previously classed as unrelieved. The patient was a woman of about thirty, of strongly neurotic and uncontrolled temperament. She had suffered much from dysmenorrhœa and retroversion, and from pains of every sort, and had become demoralized by morphine. A private letter of the date of December 4, 1891, says, "The patient upon whom you operated gained a little during the first six months. Thereafter she lost somewhat in a general way, but for the last ten months has been as well as anybody. She is said to walk, eat and sleep well, and to grow stout."

[5] Dr. Johnson's opinion, after a careful study of his cases, is that severe dysmenorrhœa usually implies some degree of pathological change either in the uterus or ovaries, though not necessarily a high degree. Dr. W. F. Whitney, who has had a large experience in the examinations of these specimens, is quoted as saying (Boston Medical and Surgical Journal, 1891, vol. cxxiv, No. 2, p. 34), with relation to "retention cysts" "the association of retention cysts with painful menstruation, certainly seems more frequent than mere accident would seem to warrant."

[6] Three Hundred Laparotomies for Various Diseases: Boston, 1887.

[7] A Case of Moral Insanity: American Journal of Insanity, October, 1883.

gion, generally of burning character; constipation; increased frequency of micturition; general neurasthenic condition.

Physical diagnosis: Retroflexion, with disease of left ovary and tube.

Family and personal history: There had been phthisis and insanity in the family, and the patient herself had suffered from hip-disease from her seventh to her eleventh year.

Operation, November, 1887: removal of left ovary and tube, both of which were adherent. The right ovary was left behind, although it seemed larger than normal.

Pathological examination (Dr. W. F. Whitney): Chronic peritonitis, but the tube and ovary substantially normal.

Subsequent history: Gradual but important gain as regards nervous symptoms. A year and a half ago the patient married, and has had a child. She is now doing well in every respect, and has gained forty or fifty pounds in weight. The pain and head symptoms were relieved.

CASE III (Dr. Johnson). Single, twenty-nine years old.

Symptoms: Severe dysmenorrhœa for three years past with general nervous exhaustion. When seen by Dr. Johnson she had headaches, pain in the back, morning fatigue, constipation and other signs of nervous weakness. She had attacks of hystero-epileptic character in which she would lose the use of her lips, and had lost consciousness, each attack being followed by prostration of three days' duration. The family history showed that phthisis had been prevalent, and that there had also been family worries.

Operation, January 31, 1888: Removal of both ovaries and tubes.

Pathological diagnosis (Dr. W. F. Whitney): Thickening of the peritoneal sheath, with retention cysts, and dropsical condition of numerous follicles.

Result: After the operation, symptoms of maniacal excitement. The hystero-epileptic attacks have never returned. Finally, gradual improvement. After two years the patient was able to return to work. On the whole, there has been great improvement, but not complete recovery. The patient has not been heard from of late.

CASE IV (Dr. Johnson). Single, thirty-eight years old.

Symptoms: Four years ago nervous prostration; never very strong; a school-teacher by profession. She came to Dr. Johnson complaining of intense pain in the left leg and thigh, shooting up from the sole of the foot the whole length of the leg and thigh, the pain being increased by coughing and laughing, also by a movement of the bowels; very neurasthenic; very constipated.

Physical diagnosis: Retroversion, with probable affection of the left tube and ovary. Every sort of treatment was thoroughly tried from July, 1887, to November, 1887, without improvement. Was seen in consultation by Dr. S. G. Webber, who recommended operation, which was done.

Operation, November 23, 1887: Both ovaries and tubes removed.

Pathological diagnosis: Chronic peritonitis, but tubes and ovaries healthy. After the operation the uterus stayed in its proper position.

Subsequent history: April 15, 1888, the patient reported by letter that she was getting on very nicely, and only suffered from general nervousness. Her spirits, which had been very much depressed before the operation, had greatly improved. Somewhat later she wrote that she was constantly gay and lively. She gained thirty pounds in weight in five months. On June 23d, of the same year, the sciatic pain was reported as still present (felt in the sacral region and running down the leg, but only when standing). Since then she has reported that she has completely recovered, and has gone back to teaching school. Would not be known for the same person.

CASE V (Dr Johnson). Married, twenty-six years old.

Symptoms: Intense headaches of neurasthenic character, with some other neurasthenic symptoms, and dragging sensation about the pelvis.

Family and personal history: Phthisical tendencies; father extremely nervous. The patient had had headaches even as a child, had been married four years, and had two children.

Physical diagnosis: Retroflexion, and small fibroid in the posterior wall of uterus; laceration of cervix; ruptured perineum. She had had an operation for the cervix and perineum, at Denver, but found only temporary relief, and no relief from the headaches. Dr. Johnson had her eyes and pharynx thoroughly examined and treated, as possible causes of the headaches. There was some improvement, but the symptoms soon returned. She had her teeth pulled, without relief. Was seen in consultation by Dr. S. G. Webber. The retroflexion was overcome by packing, which relieved the backache so that she was able to walk without pain.

Operation, finally, on the twelfth of November, 1890. Both ovaries and tubes were removed.

Pathological diagnosis: Tubes normal, and ovaries practically so (Dr. W. F. Whitney).

Results: At first she lost ground in all respects. The headaches and backaches increased; she lost flesh and strength. Her husband became frightened, and thought she would go insane; but in three or four weeks she began to improve, and now she is better in every respect and is able to ride a bicyle.

CASE VI (Dr. Johnson). Single, twenty-seven years old.

Symptoms: A neurotic patient, Jewish by race, and of a neurotic family. She was a brilliant person, but had suffered from migraine since childhood, as her mother had before her. She was a good student. The headaches increased in frequency, and finally were of almost daily occurrence. Dysmenorrhœa was so bad that an immense amount of morphine was used from time to time, and insanity was feared. Dr. Myles Standish examined her eyes, and found insufficiency of some of the ocular muscles, and operated, securing relief for two weeks only. She was then seen in consultation by Dr. W. N. Bullard, who advised removal of tubes and ovaries. The only physical sign of consequence was tenderness in the neighborhood of the left ovary.

Operation, April, 1891: Left tube and ovary adherent. Both tubes and ovaries removed.

Pathological diagnosis: "Very little found that could be called pathological" (Dr. W. F. Whitney).

Results: The night after the operation the patient had a hystero-epileptic attack with opisthotonos, lasting for six hours. Six weeks later she wrote: "I am

feeling very well, only two or three headaches, and these lasted only a day and a night. This is such a change from the headaches of six days' duration that I am much pleased. I have gained rapidly, and am much stronger than I expected to be at the end of six months." The local symptoms in this case were very slight.

The patient was last seen by Dr. Johnson on October 28th, six months after the operation. She had then gained nine pounds in weight, walked three miles a day, and had had no return of the hystero-epilepsy. She has a sick headache once a week, which is relieved by phenacetine, but the former attacks of pain in the head recurred only five times. Her general health is better.

Case VII (Dr. Homans). Mrs. S., thirty-five, one child.

Symptoms: Pain in the left side of pelvis, offensive discharge. The patient was pale and worn-looking. She had nervous prostration when eighteen, and got into the morphine habit. One ovary prolapsed and tender.

Operation, June 23, 1889: Ovaries somewhat atrophied, but otherwise normal.

Result: Marked gain in flesh and strength and general tone. Menstruation continued, and became more frequent. She gave up the morphine habit.

Case VIII (Drs. J. J. Putnam and J. W. Elliot). Miss P., thirty years old. Health delicate since childhood; for two years constant headaches; sleeplessness, with bad dreams; sense of weariness, and aching of the limbs and whole body; very readily fatigued; dysmenorrhœa and irritability of the bladder. The patient's sister is moderately neurasthenic.

Physical diagnosis: Uterus enlarged, retroverted and tender; ovaries enlarged, tender and prolapsed. Every means of improving the general vigor was tried that the patient's means permitted; and as the uterine condition was a source of great distress, careful, but unavailing, attempts were made to correct this also. Finally, in April, 1885, both ovaries and tubes were removed by Dr. Elliot. The ovaries were enlarged and very hard, and were pronounced by Dr. W. W. Gannett to show signs of commencing cystomata.

Result: Continuation of the headache for three months or more, after which gradual improvement. The same may be said of the other symptoms. No return of the menses. Patient, who had been dragging herself about in great distress for nearly two years, returned to work six months after the operation; and although she has been obliged to be careful, she has improved steadily ever since, and says that she was never in such comfortable condition as since the operation. She has worked regularly and with pleasure, and supports herself. The result has been in every respect satisfactory.

Case IX. Dr. E. W. Cushing[8] has reported a case of dysmenorrhœa, confirmed masturbation and melancholia, in a negress, with excellent results, which have persisted. Dr. Cushing has kindly written to me the following, under the date of October 10, 1891; for which reason I report the case here.

The ovaries, it may be said, were reported as somewhat enlarged, and one of them contained a cyst.

"In regard to the patient of whom you inquire, I am pleased to be able to state that the operation was completely justified by the results. The melancholia disappeared immediately after the operation. For several months the patient remained rather feeble, owing to her great emaciation and generally shattered condition, then she began to work as a seamstress, and later was able to do kitchen work; something over a year after the operation she came to me to know whether she might properly marry. I found that the proposed husband was a widower with several children, and that the nature of her operation had been explained to him, I therefore saw no impediment to her marriage, which accordingly took place; at last advices she was living very happily in New Brunswick, taking care of her household and her adopted children. I may add that, while the operation seemed to relieve both the melancholia and the desire for, and practice of, masturbation, it did not abolish the natural sexual feeling. In a large number of cases where the ovaries and tubes had been removed from adult women, I have never found one who felt that the operation had in any way impaired her sexual capacity or diminished what sexual desire she had had before the operation."

Case X (Drs. C. P. Putnam and J. W. Elliot). Single, about thirty years of age. General health poor; old hip-disease, with persistent deformity; severe dysmenorrhœa, with headaches and backache, and symptoms of excessive nervous weakness, which prevented all effort. There was no other evidence of pelvic disease, and the operation was undertaken in the hope of improving her health by relieving the dysmenorrhœa,[9] all other feasible means having been used without success. Both ovaries were removed, although healthy, on September 20, 1890.

The patient was seen by me, October 20, 1891, and reported as follows: "She has less headache, and is very much less nervous, and, on the whole, she feels much more natural and better. Her strength is feeble and she still sleeps poorly, but this has always been the case. Up to last September she continued to have severe abdominal pains, though not constantly, coming on especially after fatigue, and occasionally shooting down the thigh. In August she had one of these attacks, but none since then. 'Hot flashes' have occurred ever since the operation, especially after fatigue. She has not been able to work much since the operation, on account of lack of strength; but on the whole, she can do more than before, and is not hindered from working by general nervousness. There has been no return of catamenia."

Case XI. I can report the result at the end of five years, in an interesting case operated on by Dr. J. Richmond Barss, of Malden, under whose care the patient had previously been, and communicated by Dr. G. L. Walton to the American Neurological Association on June 20, 1884,[10] six months after the operation.

In brief, the case was that of a single woman, twenty-nine years old, without neurotic inheritance. She had suffered ever since puberty with dysmenorrhœa and backache. For two years she had been confined to the house, and for a good part of one year to her bed. She had become excessively weak and nervous, and was subject to frequently recurring convulsive attacks without either loss of consciousness or the usual signs of typical hystero-epileptic seizures.

Dr. Walton, who was called in consultation, found a well-marked hemi-anæsthesia, and signs of extreme irritable weakness of the nervous centres, besides great

[8] Journal American Medical Association, Chicago, 1887.

[9] I have not undertaken to collect all the cases where dysmenorrhœa furnished the sole reason for the operation. A number of such cases have occurred.

[10] Journal of Nervous and Mental Disease, vol. xi, July, 1884.

ovarian tenderness. The ovaries were found full of small cysts,[11] but not materially enlarged.

Dr. Barss writes, under the date of October 20, 1891: "In 1889, five years after operation, she was remarkably well for her, and was earning her living at sewing, could walk quite good distances. Previous to the operation she was practically confined to the house for two years, one of which was mostly spent in bed. Her tubes were not removed, and she flowed for several months more than she ever did before. I should say it was a year before we began to see *marked* improvement. To my mind her case was very satisfactory."

Besides these hitherto unpublished cases, Dr. Homans has recorded four,[12] in none of which material or permanent improvement occurred.

Dr. Elliot suggests one reason for doing oöphorectomy, which is, of course, familiar to gynecologists, but not so much so to the general practitioner; that is, that, by inducing the menopause and uterine involution, it may secure the disappearance of painful and wearing uterine affections not to be treated successfully in any other way, without inducing an amount of fatigue and depression which in the case of many debilitated and neurasthenic patients, would overbalance the benefit received. Of course, in many such cases a thorough treatment of the underlying nervous state might render gynecological treatment unnecessary.

Finally, I have a case of male castration to report. The patient was not under my care when the operation was done, but the case has never, to my knowledge, been published.

The patient is now a man of forty-one. He has been unbalanced all his life, and especially so since a severe blow on the head in childhood. The operation was performed three years ago. For some years previous he had been a dipsomaniac, and excessively and openly erotic; and for a time it had been necessary to confine him in an asylum.

The castration was done at his own urgent desire. His friends confirm the statement that he makes, that his mental condition improved to a marked extent. He is at present unreliable and suspicious to a considerable degree; but his desire for liquor and his erotic tendencies have been absent since the operation, and his disposition has been quieter, so that he is able to live alone and take care of himself, though requiring more or less supervision.

In conclusion, I do not claim that the favorable results reported for these cases could not have been brought about in some other manner, but only that they were, or seem to have been, brought about in the way described, and that the patients are not reported as regretting the operation.

The following opinion seems to me the most reasonable:

When ovarian or uterine disease of slight or moderate amount is associated with marked nervous symptoms, whether these are of the nature of unusual local pain or of a more general character, it is rarely the case that the local disease is alone at fault, and the physician should look carefully for other signs of the main trouble in the nervous system itself. It is so often found, in practice, that by invigorating the general nervous condition the patient can be made comparatively insensitive to local irritations, that, before deciding on a step which may lead to bitter regret and disappointment, or to more or less persistent nervous symptoms of the former, or of a new type, the physician should omit no other means for accomplishing his aim, which study, determination and skill can secure; and even if he fails he should remember that his chance of success through oöphorectomy is not of the best. It should be especially borne in mind that the elements of personal temperament and personal influence play an important part in the treatment of neurasthenia and mental disorders, so that some new physician may succeed where many have failed, or that every one may do better than he believed possible, if he chooses the best method and relies upon it with sufficient persistence. It is certainly true that neither the patient nor the physician is likely to devote the necessary determination and zeal to the general treatment, if the possibility of a more speedy cure by operation is kept looming in the background. In the minds of both of them the treatment selected should be for the time the only treatment.

"When half-gods go, the gods arrive."

The new light which the investigations into hypnotism and kindred subjects have thrown upon the pathology and therapeutics of the nervous system, indicate that when oöphorectomy cures neurasthenia, it sometimes does so by so-called "suggestion," that is, by influencing cerebral processes not ordinarily concerned in active consciousness,[13] but having a great deal to do with the nutrition, sensitiveness to pain, and the like, and there is always room for hope that some other and less objectionable means can be found of exerting this influence. It is probable that electricity and the "rest-cure," as well as hypnotism, act often in this way.

All this the physician should conscientiously say to himself, but, having done so, he should with equal conscientiousness recall the cases in which oöphorectomy was the agent that restored the wished for health, and should look upon it as another and valuable string to his bow, though one of only occasional utility.

As regards the kind of cases in which oöphorectomy seems most justifiable — apart from considerations of non-medical character — it is doubtless true that the serious, typical neuroses, and especially epilepsy, are rarely benefited, and the less so in proportion as the symptoms are of definite character and independent in origin of the pelvic disease. The mere fact that nervous symptoms are worse at or near the the menstrual period, by no means necessitates the conclusion that there is any important causal connection between the two series of events.

On the other hand, it would be incorrect to conclude that because a woman has neurasthenia or hysteria, even if they be on an hereditary basis, and wholly independent in origin of pelvic irritation, it is therefore impossible that the removal of such irritation, or the induction of a premature menopause, could be a means of cure. This may not happen often, but such cases as Case I of this series, shows that it does happen occasionally.

THE German Government is to establish a modern, well-equipped biologic station on Heligoland.

[11] See the opinion quoted from Dr. Whitney (above) as to the relation between retention cysts and dysmenorrhœa.

[12] Laparotomies, Boston, 1887.

[13] Compare Association Neuroses, Morton Prince, M.D.

REPORT OF A CASE OF HÆMORRHAGIC OVARIAN DISEASE, WITH LAPAROTOMY FOR INTERNAL HÆMORRHAGE; DOUBLE OVARIOTOMY; RECOVERY.[1]

BY GEORGE W. DAVIS, M.D., HOLYOKE, MASS.

I WISH to premise the report of this case very briefly by saying, death from internal hæmorrhage is of more frequent occurrence than is usually supposed. Internal hæmorrhage, even of severe type, is in some of its varied forms liable to go unrecognized, the symptoms accompanying it being attributed to other sources, or, if recognized, its importance may be under-estimated; medicines and general management being relied upon for its control when nothing short of opening the abdomen and securing the bleeding vessels can save the dying patient. These cases are often urgent, allowing no time to secure a special operator from a distance. They are, in fact, frequently emergency cases. Valuable time should not be wasted in useless consultation with physicians who never operate, consequently seldom appreciate its importance, and when the question of operation arises, are almost sure to decide against it.

I have to record three cases occurring during my experience, where the patient died from internal hæmorrhage, and in each of these cases I was able to secure a post-mortem examination which confirmed my diagnosis and convinced me that a laparotomy might have saved the patient. Is it probable that such cases would occur more frequently in my practice than in that of my neighbor?

My reflections upon these deaths together with others where no post-mortem was possible, with such study of the literature of internal hæmorrhage as I have been able to make, have led me to make many resolutions and some preparation for the future management of similar cases.

I was called July 20, 1891, by telephone, to Westfield, to see Mrs. B., in consultation with Dr. E. B. Karner. Upon my arrival I met Dr. E. D. Hutchinson, who had been previously called, and who was now in attendance with Dr. Karner. From these gentlemen I learned the following history of the patient. Age thirty-three, married thirteen years. Never had children, and had never been pregnant to her knowledge. At the time of her first menstruation, which occurred when she was aged sixteen, she was caught out in a severe winter storm, and walking a long distance became nearly frozen. Menstruation had always been irregular. She had a nervous temperament with hysterical tendency, and two years ago, showed indications of angina pectoris by several painful attacks.

May 25, 1891, she commenced flowing, but had no pain, and was about the house till June 18th, when she was taken with severe pain in left side of bowels, which she thought was another attack of angina. Four or five days later, Drs. Karner and Hutchinson found, by vaginal and external examination, a solid movable tumor in the left pelvic region. The pain and tenderness gradually subsided, but the tumor continued to grow larger while its solidity became less marked until July 19th, at bed-time, when she was seized with severe pain, and Dr. Karner was called. He found her nearly unconscious, blanched, nearly pulseless, with irregular and jerky respiration. The doctor considered her condition alarming — liable to die at any moment; but with suitable restoratives she rallied, and was seen next morning by Dr. Hutchinson, who confirmed the report of her condition just stated. Dr. Karner had recently seen something in the lochia which resembled placental tissue, but further than this there were no signs of pregnancy. The abdominal enlargement was now rapidly increasing, and tenderness had become extreme. The pulse was getting weaker and more rapid. Elevation of temperature had been present. I found the patient at 6 P. M., very weak, with an anxious expression which indicated she was suffering from something of a serious nature. She presented a sallow complexion suggestive of blood-absorption. Upon examination the abdomen was found considerably distended and extremely sensitive; so much so, as to preclude the desirability of percussion, but by light and careful palpation I made out the enlargement in abdomen which was most prominent in the left iliac fossa; but the abdomen was more generally distended, and I could satisfy myself of the presence of some larger mass above and extending to the right of uterus. Upon vaginal examination the posterior cul-de-sac was found to be obliterated by a semi-solid mass which filled the pelvic cavity pushing the uterus before it, the cervix being pressed against the symphysis, was difficult to recognize in its new position, and surrounded by the tense abnormal swelling.

I was able, however, to satisfy myself by bimanual examination, that the uterus was not much enlarged and that the mass above as well as below was not very intimately connected with it.

My diagnosis was internal hæmorrhage, making a hæmatocele or hæmatoma on left side, with peritonitis developing, and possibly if not probably, extra-uterine pregnancy, and, with ordinary treatment, the prognosis was unfavorable; she could not survive many days and the bleeding might at any time become more profuse, and end the patient's life abruptly. I believed surgical interference might give her a chance for recovery, while without it she had none. Upon being questioned I said she would have one chance in two to recover if she selected operation. After consulting together the family decided for operation, and I was requested by the attending physicians to operate. I promised to return on the next day and make the operation.

In the meantime the adjoining room which was used as a family sitting-room, was converted into an operating-room by removing the carpet and furniture, giving it a thorough sweeping and cleansing, and thoroughly airing it by leaving the doors and windows open.

The patient was bathed, rectal enema and vaginal douche given. This patient was treated in her own home, which was in the lower story of a tenement building, where the surroundings, from a sanitary point of view, were much neglected. The patient's room was connected with the family kitchen. She occupied the same bed after the operation that she had previously used, and while all persons connected in any way with the case were quite anxious to add to the patient's comfort and safety, many things were from necessity not as we would have desired. A new tin wash-boiler was secured, filled with water, and heated on the kitchen stove, also several new milk-pans for the sponges and instruments. Several large

[1] Read before the Massachusetts Medical Society, Hampden District, October 20, 1891.

pitchers were filled with the various solutions to be used, and marked, so no mistake could occur. A fountain irrigator was arranged, but we found that too much time was consumed by its use and it was discarded. At 4 P. M., July 21st, the patient having been etherized, mons veneris shaved, and the abdomen thoroughly washed in soap and water and sublimate solution followed by application of ether, the lower abdomen surrounding the seat of operation being protected by warm towels wet in sublimate solution, the operation was commenced.

There were present and assisting, Dr. E. B. Karner, Dr. E. D. Hutchinson of Westfield, Dr. Ella M. Davis of Holyoke, and the nurse Mrs. Clark of Springfield. Upon entering the abdomen in median line and introducing two fingers to explore its cavity, almost at once I opened up a large hæmatocele at the left, from which black and grumous blood flowed out, filling the wound and flowing over the patient.

This was caught with sponges, towels, etc., for the moment, and Tait's trocar was introduced into this blood cavity as soon as possible, and a portion of its contents drawn off, but as there were many clots the trocar was soon clogged with them and rendered useless. I then tried to remove more of the cavity contents with my hands, but found it impossible to do so, as the brim of the pelvis was so completely filled by a large cyst which rendered its entrance from above impossible. This proved to be a multilocular cyst of the right side. The abdominal wound was now enlarged, and this tumor reduced in size by tapping and the use of trocar until I was able to lift it out of the abdomen. There was almost no pedicle. It seemed to spring from the right side of the uterus. This was, after some difficulty, ligated as close to the uterus as possible and cut off with scissors. A Staffordshire knot was used; but owing to the great amount of tissue included in the ligature I feared it might not remain secure, and tied the mass again in two parts, leaving the three silk ligatures in and surrounding the stump. In tying the Staffordshire knot the ligature broke twice, although I had tested it a few hours before with my full strength and could not break it.

All this had taken time, the patient was getting weak, and I was notified that the pulse was failing. The hæmatocele was now cleared out with my hand and with sponges, the intestines being held back and kept covered with warm towels wet with sublimate solution. The hæmorrhage now became quite active in the blood cavity, and I introduced my hand and found an irregular mass, quite firm, which was also the source of the hæmorrhage. It was quickly separated from the surrounding tissues by the hand only, guided by the sense of touch. It was actually torn from its bed in the mass of deposit with which it was surrounded. The adhesions were very firm, and I feared the underlying structures would be injured, but there was no time to lose, as the patient's pulse had stopped, and we thought she would die on the table. This mass, which included the left ovary and tube with a cystic and hæmorrhagic tumor which had ruptured, was quickly tied off and cut from the pedicle. Then as quickly as possible the pelvic cavity and lower abdominal cavity was filled with previously boiled water, its temperature several degrees above that of the body, poured in from a pitcher and thoroughly washed out. This was done several times, and certainly did much to resuscitate the patient. Hypodermic injections of brandy were also given. The abdominal and pelvic cavities were quickly dried, the wound closed with catgut sutures, and a large and long glass drainage-tube, which reached to the bottom of the pelvic cavity, inserted. The wound was covered with borated cotton on which was spread an ointment of iodoform (one drachm), boracic acid (two drachms), bismuth subnit. (four drachms), with vaseline (two ounces), and the patient hurriedly put to bed. The bed had been supplied with hot-water bag and bottles, hot blankets, etc. Through the efforts of Drs. Karner and Hutchinson the patient soon began to show signs of recovering from the collapse in which she had so nearly died.

Evidence of general peritonitis was not found. The blood had been confined to the pelvis by the cyst of the opposite side, which effectually blocked the pelvic entrance and lifted the intestines before it into the upper abdominal cavity. The quantity of blood and clots removed from the hæmatocele was estimated by those present to be about two quarts.

It was now nearly time for the train, and I hurriedly left the patient with her former attendants. The nurse recorded the time of operation as about one hour and fifteen minutes.

The next day the temperature in the morning was 99°, evening, 100°; morning pulse 110, evening pulse 128. Patient very thirsty.

July 23d; temperature in morning 99°, evening, 100.8°; morning pulse 120, evening pulse 108. Abdomen was very tympanitic. Thirst continued. The wound was examined and drainage-tube found to be too long; it was changed for a shorter one. The discharge from wound was very slight.

July 24th; temperature in morning 100.2°, evening, 99°; morning pulse 120, evening pulse 108. The drainage-tube was removed and a stitch inserted. Several movements from the bowels with much gas, followed by relief to the patient. Thirst subsiding.

July 25th; temperature in morning 98.2°, evening, 98.2°; morning pulse 106; evening pulse 100. The bowels still remain quite tympanitic, and the patient suffers pain from this cause. Dr. Karner passed a flexible rectal tube, and succeeded in relieving the bowels of a great quantity of gas.

The tympanites seemed to be the occasion of nearly all the complaint of the patient, and it gradually diminished from this time on. The stitches were removed on the eighth day, and the wound was in the best of condition. Except for a slight chill on the night of the eleventh day, which was caused by an open window and insufficient covering, the patient steadily improved from this date on, and sat up for the first time August 16th, twenty-six days after the operation. At the present time, which is between three or four months later, she is entirely well.

Of the two masses removed at this operation, the larger is the cyst removed from the right side. It appears modest in size, in a collapsed condition; but as it lay distended in the abdomen, it was perhaps twice the size of an adult head. It is multilocular, being divided into six or eight unequal portions. The other specimen, about the size of a man's fist, is very irregular in shape, and presents a ragged and shreddy surface caused by the torn adhesions. The left ovary and tube are seen and readily recognized; this cyst is also of the multilocular variety. The rupture is plainly seen which permitted the blood after having distended the larger portion of the tumor to escape into the per-

itoneal cavity. At the time of removal, this tumor was filled with coagulated blood.

My reasons for reporting this case are:

(1) My belief that the case is of great interest as explaining the source of hæmorrhage in obscure cases which may be found many times in a hæmorrhagic state of diseased ovaries and appendages.

(2) It is interesting and instructive to know that a patient may endure an operation of this kind and make a good recovery after the general circulation has lost so much blood, and this in a patient who had suffered from such general constitutional disturbance, as well as from local pelvic inflammation, lasting for several weeks.

(3) This case presents a strong argument showing that patients who require laparotomy can be successfully treated in their homes with the aid of good trained nurses, whom we fortunately have at our command. Furthermore, it tends to show that the general surgeon may be competent to meet the exigencies of similar cases, and that cases of emergency should not be allowed to die by a waste of time in attempting to obtain the services of a specialist from a great distance.

THE SEMI-PRIVATE CARE OF EPILEPTICS.[1]

BY LUCIUS W. BAKER, M.D.,
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In nearly every community will be found one or more individuals who are suffering from that peculiarly distressing disease known as epilepsy. Niemeyer places the proportion of such cases at six in every thousand.

In this disease the autopsy and the microscope have afforded us but little satisfaction. There seems to be no fixed and constant pathological lesion attendant upon the wide assemblage of symptoms classified under the name of epilepsy. The few histological changes which have been reported are, it seems to me, to be considered as results rather than causes of the disturbance.

But if our knowledge of the actual pathological changes occurring in epilepsy is vague and unsatisfactory, the results of experiment and clinical observation are more gratifying, for the researches of J. Hughlings-Jackson, Gowers and others have furnished us with a more satisfactory explanation of the phenomena of the disease than any we have heretofore possessed.

According to these observers an epileptic paroxysm is due to a sudden and excessive functional activity of the gray matter in some portion of the brain. This rapid action of certain nerve centres, with its resulting phenomena, is called a "discharge," which may commence in any part of the gray matter of the brain, remain confined to the portion in which it originated, or may extend to and involve other portions; hence the wide variety of manifestations which constitute an attack. There may be, for example, a momentary loss of consciousness, a slight incoherence, or mental blank, without muscular spasm; or the attacks may be of a convulsive character, involving few or many muscles; auræ of the greatest variety may be present, or the patient may have no warning whatever of an approaching seizure, while not infrequently the attacks are preceded or followed by more or less mental excitement.

This rapid liberation of energy in the nervous centres, giving rise to an epileptic paroxysm, may be due either to a sudden diminution of inhibitory power, or to an excessive and rapid generation of nerve force within the cells affected. It is, however, important to remember, that the primary and essential element in the production of a "discharge" is the presence of an inherent instability of certain portions of the gray matter within the encephalon, which may be due to heredity or other predisposing causes, some of which are beyond our power of detection.

The manifestations of epilepsy are such as to usually incapacitate the individual from engaging in the ordinary occupations of life, and not infrequently compel him to become a useless burden upon his friends or upon society. In the vast majority of cases epileptic attacks leave a permanent impress upon the cerebral structure; we seldom meet with a case in which careful study will not detect some evidence of mental impairment. Many terrible crimes have been committed during an outburst of epileptic mania, while all degrees of mental degeneration will be met with down to complete idiocy or dementia.

An epileptic is not only exposed to all the dangers resulting from a sudden loss of consciousness; he may also, in a greater or less degree be mentally defective. He has, therefore, a double claim to be dealt with according to his peculiar requirements. But, singular as it may seem, when we consider the nature of his malady, these claims have, in this country at least, been almost entirely ignored.

At present the only place, to my knowledge, in which an epileptic can be received for care and treatment is in institutions devoted to the care of the insane and these are obviously unsuitable for this class of cases. Hospitals for the insane are intended only for the treatment of mental diseases. This is their special office. They were never designed for the treatment of epileptics any more than for the treatment of dipsomania, and it is a manifest injustice to send an epileptic to one of these institutions. Such a course cannot but be detrimental to both classes.

During their freedom from attacks, epileptics resent the companionship of the insane, while the latter ought never to witness the wild contortions or to hear the piercing cry of an epileptic seizure. *So far as the care which society extends to its afflicted members is concerned, a man had better be insane than an epileptic.*

I am well aware that the medical profession generally entertains a gloomy view with regard to the results of the treatment of epilepsy, and that the opinion prevails that it is an incurable disease. Granting for a moment that this is correct, is not the same equally true of many other diseases the severity of which we are able to relieve materially by judicious care?

One advantage, among others, which the long-continued hospital treatment of epilepsy will secure, is the administration of the necessary remedies with unfailing punctuality, and the proper regulation of the diet; two important factors in securing a favorable result. The difficulty of securing these necessary conditions will account for many failures in the treatment of this disease in private practice. I have frequently had patients remain entirely free from attacks during a hos-

[1] Read before the Section for Clinical Medicine, Pathology and Hygiene, of the Massachusetts Medical Society, Suffolk District, October 21, 1891.

pital residence of months, but have known the seizures to return soon after their removal to home surroundings.

In an interesting paper[3] read before this Society last December, Dr. W. N. Bullard called attention to the lack of proper facilities for the care of the pauper epileptics of Massachusetts, and urged that separate provision be made for this class of patients. The subject was quite fully discussed at the time, and at the last annual meeting of the Massachusetts Medical Society, a committee was appointed to present the matter to the Legislature. Should any action be taken by the State, I presume that certain cases of epilepsy, now in the State hospitals for the insane, will be separately provided for, as will also those cases now in institutions for children, who have reached adult life.

Several years ago I became interested in the care of epileptics in connection with a small charitable institution for children, which was then in its infancy, and which was one of the first in this country to provide special accommodations for this class of patients. At that time we received a few patients who were beyond the age of childhood, and also foresaw that a difficulty would arise within a few years as to what should be done with those who, coming under our care as children, should remain until they became adults. This is now proving a serious problem to the managers of the same institution, whose capacity has since been largely increased. Their last report says, "that of the reported number of cases of epilepsy a very large proportion is above the age of fifteen years. As a rule, parents prefer to keep their own children if possible, and while they are young it is generally possible; but after they get to larger years the difficulty of managing them becomes more than the family is willing to undertake, or the friends to permit. They are then reported as epileptic and a place of asylum is sought for them. The larger number of our applicants is of this class. The number is a growing one, and the time is near when provision must be made for the hospital care of a considerable number."

The older cases of epilepsy are manifestly out of place in an institution for children, but as yet there is no other place to which they can be sent, except the insane asylum or almshouse. As the matter of providing for adult pauper epileptics was carefully considered last December, it is not necessary for me to discuss it further at the present time. I desire rather to call your attention briefly to the desirability of also providing suitable accommodations for epileptics whose friends are able to pay a moderate sum for their support.

No one who has not had practical experience with such a patient can appreciate the continuous strain which an epileptic occasions in the family to which he belongs. The constant liability to disastrous falls or injuries, the mental hebetude, the irritability, the peevishness, the unearthly cry, the distorted features, the wild contortions are a continued source of care and anxiety which few can long endure without injury.

In the ordinary home, an epileptic can seldom obtain the care which his condition requires. The wealthy can, of course, provide separate apartments and special attendants, but even these often prefer accommodations elsewhere. I have had such cases under my care in the past, and within a few weeks I have had a most urgent request to receive an epileptic patient, whose parents are both able and willing to pay well for his care. Similar letters come to me from time to time showing that there is a demand for such accommodations even among those who are amply able to care for their friends at home.

But the burden rests heavily upon those in moderate circumstances, whose means will not permit their entrance into a strictly private institution even if they could be received. Such cases are willing to pay all, and even more than they are able.

I doubt not but that there are many cases of epilepsy among the middle classes of this State, who for their own and others' sake ought to be taken care of away from home, but whose friends will not allow their removal to any strictly charitable institution for epileptics, did one exist.

The scale of expenditure demanded in the private asylums is such as to place them beyond the reach of people of moderate means, and even those whose circumstances will enable them to command the resources of these institutions are debarred from entering them on account of the nature of their disease, for epileptics ought not to be associated with nervous or mental cases, in the same institution, or even within the same grounds. I speak from experience, as I once had a cottage filled with mild private cases of epilepsy, but was obliged to send them all away, on account of its close proximity to another building in which there were other nervous patients.

It seems desirable, therefore, that these cases should be provided with suitable accommodations away from other patients, and at a sufficient distance to prevent annoyance to the community in which they may be placed. The buildings should be arranged with special reference to the peculiar requirements of those who are to occupy them. A one-story structure will be preferable, and the house and its furnishings should be constructed so as to diminish, as far as possible, the liability to injury from falls.

I can see no serious obstacle to the establishment and maintenance by benevolent people of small institutions for the care and treatment of non-pauper epileptics. Such an establishment in my opinion should be entirely free from State control. It should be managed by a board of trustees as a private institution, with nothing in its name to characterize its special work.

The building should be located in the midst of ample grounds, without neighbors in its immediate vicinity, and provision might well be made for a variety of light occupations, as during the intervals between the attacks many epileptics are able to work, and are much better for being occupied. The house should also be furnished with all the comforts to be found in the homes of people of moderate means, so that the home-like atmosphere may be continued as far as possible. If suitable rooms were provided I have no doubt they would soon be occupied by those able to pay a large sum for their accommodations, thus diminishing the expenditure of the institution.

In brief, I would furnish this class of epileptics as I would many of the milder cases of insanity, with all the comforts of a well-ordered home; with trained attendance and with skilled medical care at a price within their limited means.

I am well aware from personal experience that such accommodations will be quite expensive. To carry on such an institution successfully the amount received for

[3] Journal, vol. cxxiv, p. 25; Discussion, p. 36.

board must be largely supplemented by the contributions of benevolent people able and willing to aid such an enterprise. An endowment fund will be of the first importance, and this would doubtless be secured as soon as the necessities of this class are fully understood.

It is our pride and boast that Massachusetts never turns a deaf ear to the cry of the sick and the suffering, that no worthy enterprise lacks support among us. I trust that the time is not far distant when to our long list of benevolent enterprises will be added one or more devoted exclusively to the treatment of epilepsy.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODETT, M.D., SECRETARY.

Wednesday, October 21, 1891. The meeting was called to order at 8 o'clock by the Secretary. The first business was the election of a chairman. Dr. E. G. Cutler was unanimously re-elected to that office.

Dr. L. W. Baker, of Baldwinville, Mass., read a paper upon

THE CARE OF EPILEPTICS.[1]

Mr. F. B. Sanborn, formerly Inspector of State Charities, opened the discussion:

I have been long acquainted with Dr. Baker and with his interest in this subject, the care of epileptics. I do not know whether Dr. Baker attempted to give any estimate of the number of epileptics in Massachusetts. I have never been able to arrive at any estimate. The census does not give any estimate. Within a few days, however, expecting to listen to Dr. Baker here, I endeavor to look up the matter. I went to the different boards in Boston, and I find it is not in the possession of any board or bureau in the State, and can only be arrived at by estimate. I suppose we have at present in Massachusetts not less than 8,000 insane and idiotic persons. The census may not show so large a number. Now of those two classes a definite proportion, not less than five per cent., is always found to be epileptic. I estimate, therefore, that if we have 8,000 persons mentally affected in Massachusetts, we must have from 400 to 800 epileptic persons among them, in the later stages of epilepsy, ordinarily where the mind has been seriously and oftentimes permanently affected. There must be at least double this number I suppose of persons where epilepsy has not yet reached this stage. It may never get so far. I therefore suppose that we must have in Massachusetts from 1,200 to 2,000 persons of the epileptic class. This probably is constantly increasing as our population increases.

Now the State has made no provision, separate from the care of the insane, for this class of persons, except in the small institution which Dr. Baker founded at Baldwinville, and which contains at present something like 80 epileptic children in the hospital cottages. Most of these are persons belonging to the pauper class, that is to say, come from families not able to pay even the small sum which is required in the institution for the board of the children (amounting to about $3.25 per week), and therefore are supported either by the State or by the gifts of benevolence. There are some supported in the almshouses, etc. There is, in addition to this class of the epileptic poor that must be supported by the tax-payers, a considerable class of persons whose friends are able to support them, but have absolutely no place to which they can be sent, where they can receive special attention apart from other patients, which epilepsy requires. That is a serious deficiency in our charitable system. It is one in which Massachusetts is not alone by any means. There is no State in the Union, I think, which maintains a special institution for epileptics which is sufficient to receive the epileptic persons of that State, and few of the countries of Europe have any such institution. There are several excellent institutions for epileptics in Europe; but in Massachusetts we certainly are able to support, and I think the munificence of individuals will be ready to organize, an institution for persons of small means, who can afford to pay the expense of placing their relatives in such an asylum. It would be necessary, I suppose, to begin in a small way and probably it would be found desirable not to increase the number of inmates of such an asylum to anything like the number treated at Bielefeld. That would be my own view of the subject. The public authorities will provide in their own manner, and they will constantly improve the treatment of their own cases. They will provide for the epileptic poor; but the other class will be compelled, until some such asylum is established, to be sent either into families where oftentimes they can be properly treated, (but by no means the whole number can be so disposed of), or else into asylums for the insane, where they not only very much disturb the treatment of the patients who properly belong there, but fail to receive the treatment which they themselves require.

The case of Barber, reported in the *American Journal of Insanity* by Dr. Wise, which came under my personal observation, illustrates well the dangerous homicidal tendencies of some epileptics.

I suppose there is hardly a person in this community who would be less suspected of epilepsy than Richard Barber was for months and years before this homicide; and yet, he being subject to a species of latent epilepsy, seizures occurring only in the night, had fallen into the dangerous and distressing condition which epilepsy sometimes produces, that is homicidal fury, which will cause an assault upon any person within reach of the epileptic. He had killed his two best friends in America, and when it was over he was unconscious of the deed.

This is one of the dangers to which any community is exposed which makes no provision for its epileptic subjects.

Mrs. Mary A. Livermore: While Mr. Sanborn was talking, I have been running over in my mind and trying to make a *résumé* of the number of persons I have known who have been afflicted with epilepsy in the last thirty-five years. I am able to recall forty-two. The results of my observation have convinced me that this affection is much more common than one would think. I have not found that a very large proportion of epileptics are connected with the very poor people, or those whose lives have been exceedingly barren of comfort or nourishment or who have been very much vitiated by bad habits or bad methods of living. Almost all the epileptics whom I know are so situated

[1] See page 651 of the Journal.

that they could pay for care in an institution, if there were one in which they might be received. They could not pay fabulous prices, but could pay *something*. Of the eighty epileptics now in the hospital at Baldwinville, I am informed that forty pay *something*. So that it does not seem as if it would draw so very largely on the funds of those charitably disposed if this matter were attended to.

Everything that has been said concerning the difficulty of taking care of epileptics in the *family*, is so true that it cannot be overstated. It is not a possible thing, unless one can set apart rooms for the epileptic, and have one person in charge of him constantly. I have found that in cases where the epileptic could be absolutely under control in regard to habits of rising and retiring, food, etc., the horror of the thing could be mitigated and the person made companionable and attractive in the family. I believe the frequency of attacks may be greatly diminished by strict attention to food, habits, etc.

Mrs. Livermore described at length an institution for epileptics in London, in which the different classes of epileptics received treatment suited to their condition.

DR. T. W. FISHER: When the subject of a new hospital is broached, the questions always arise. Where are the patients coming from? Is there a sufficient number of patients of that kind to avail themselves of the new institution? Perhaps these are not difficult questions to answer, for I do not know of any hospital so large that it could not be filled in six months.

The question of epilepsy is interesting, like everything connected with the subject. I was unable to get any facts in regard to the number of epileptics in Massachusetts; neither could I find directly the number of epileptics in our State hospitals in Massachusetts. The statistics deal with admissions only, and not with the number of resident epileptics. The number of epileptics in my own hospital, which contains 435 patients, is 27, or about six per cent., and six per cent. of the number in the State hospitals would be about 300. The number admitted to the State hospitals for eleven years I find to be 731 cases of epilepsy. In that number 17 recovered and 231 died, showing an extremely high death-rate, and an extremely light percentage of recovery. Perhaps some allowance is to be made because recovery from epilepsy is rather deceptive. The United States census for 1880 shows 74,184 insane in the United States, of which 6,842 or nine per cent. were epileptic. In 1880 I find that there were 281 epileptics in the State institutions, or six per cent. of the number of insane.

In Berlin the number of insane in the city has increased very rapidly, much more so than the population; and the number of insane in the hospitals of Berlin, public and private, in 1890 was 22,659, including idiots and imbeciles and epileptics. Of this number 494 were epileptic, showing 19 per cent. against six per cent. in this State, so that our proportion of epileptics in insane hospitals is much less. At Bielefeld, which I visited, I saw institutions for the treatment of epileptics containing 100, who are mostly pauper epileptics, and who are taken care of in a most suitable and creditable manner. I saw one immense dormitory containing nearly 100 epileptics having beds about twelve inches high, so that the person could receive no injury by falling out of bed at night. That ward was under constant surveillance during the night, and aggravated cases were at once removed to the adjoining sick-ward. But the number of epileptics in Berlin has increased so rapidly, as well as the insane, that they are about to build a separate colony hospital for about 600 epileptics. This meeting is not especially concerned with that class of epileptics, but the statistics may be of some interest. The increase of insanity in Berlin and Germany, which is far beyond that of the population, is also the same increase as seen in the United States. In 1881 the number of insane in the United States in hospitals was fixed at 56,205, in 1889 the number was 97,534, an increase in nine years of about 75 per cent., while the population has increased 25 per cent.

There is no doubt about there being enough epileptics, of the class mentioned, in the State to fill any hospital that the benevolently inclined are likely to erect. Being connected with a public hospital, I see fewer of the cases of epilepsy of this sort, than physicians in practice outside; and I do not imagine that this new institution would make any great drafts on the State hospital or city hospital for insane. The cases that go to those hospitals are generally the long-standing cases in which the mental symptoms are very pronounced, and the great majority of them are also from the non-paying class. I now and then see cases in private practice which would be good subjects for hospitals of that sort.

Dr. Baker did not speak of one important point, and that is the legal status of patients in an institution of the kind he described. The epileptics in an insane hospital are all classed as *insane*, can be detained and controlled as if they were insane, and in these hospitals in Germany the status is the same.

Although these hospitals might be very readily filled, the population, I fancy, would be somewhat fluctuating and changing. An adult epileptic is very apt to be self-confident, and make very light of his disease. While he might for a time subject himself to treatment in an institution, there would be the probability that after a shorter or longer time he would insist upon going at large. He would dislike the restraint and confinement of an institution, no matter how pleasant and homelike a character it might possess; and I think, to give such an institution the highest value, the patients ought to be committed as they would be in any private institution for the insane. There is no doubt that such an institution would do great good.

Epilepsy, if curable at all, is curable in the very early stages and in the earliest years and months of the disease, and it would be at that early period that the treatment in such an institution would be of most value. The prospect of cure, however, in any stage of the disease is not brilliant, I must admit; but the benefit to be derived by prolonged care and attention is exceedingly great. Not only is the epileptic very much benefited, but the community and the family are protected from the evils that are consequent upon this condition.

DR. J. J. PUTNAM: I came here fully impressed with the very great importance and difficulty of this problem, and not at all prepared to offer a solution of it. I feel that the subject is a very large one, and I do not think that even yet we have entirely covered it. There are certain points on which I suppose we shall agree. First, we all should admit, I think, the great desirability of such an institution as Dr. Baker spoke of for pauper epileptics, since they are a great drain

on the happiness and well-being of the families in which they live. Then comes the question of the class of the well-to-do patients. It seems to me the case is quite different, and we are obliged to individualize very much more largely. Dr. Fisher alluded to two points which seem to me of great importance. In the first place. that we should have a right to detain these people so that we might be able to protect the community from such persons as Mr. Sanborn has spoken of.

I have been treating these patients at an out-patient department for twenty years, and I know of many cases of epileptics who live at home happily and support themselves. But supposing persons could not be detained the greater part of their lives in such an institution, they might be kept long enough to ascertain what for them was the best treatment, and their friends and relatives could be urged to carry it out. I agree that the hygienic treatment is by far the most important.

I think such a hospital would be of great service for purposes of study of this disease. When it comes to the life-long separation of such patients from their families, the difficulties become much more manifest. It is doubtful whether we have the right to expose other epileptics to the danger of homicidal patients.

Although children could be made pretty happy in such an institution, it is very doubtful whether adults could be easily made happy in such a place, and I think we are bound to consider their welfare as well as that of their friends. Most epileptics are to a great degree ignorant of the severity of their attacks. In such an institution as this they would have these attacks constantly before their eyes, and it would add greatly to their sufferings.

It seems to me, although such an institution might be very useful, that it should be gotten up, not on the plan corresponding to the colony system, but on the plan of the boarding-out system, which has worked so well with children destitute and difficult to manage. I think it would be possible to find a considerable number of first-rate homes where epileptics could be taken and kept almost singly, and at the same time the advantages of this mode of treatment over that in the hospital, would be, so far as the patients are concerned, very great.

Dr. Morton Prince: I am very glad to have an opportunity to endorse the views of the reader of the present paper. It seems to me the need of a hospital of this kind is a self-evident proposition. It seems a most extraordinary fact that while provision has been made for people suffering with almost every other disease, no provision, public or private, has been made for the epileptics. The deaf, dumb, blind, and even persons with nervous prostration, now have a hospital; but the epileptic has nowhere to lay his head. The necessity for such a hospital seems to be shown by the fact that in other countries, on the Continent particularly, they have provided hospitals for epileptics, although not for the particular class to which Dr. Baker refers. I have made attempts to ascertain the number of epileptics in Massachusetts, but they have been unsuccessful. I had the curiosity to see how many cases were treated at the City Hospital in the course of a year. I found that in the course of one year 41 patients applied there with epilepsy. The Massachusetts General Hospital does not publish in tabular form the diseases treated there, but if we assume that the same number apply there. and a similar number at the Dispensary and the Carney Hospital, that would be about 120 a year at the different hospitals of the city. Of course, that is a mere estimate; so that, as the life of an adult with epilepsy is not particularly shortened by the disease, in the course of ten years 1,200 epileptics would accumulate in the community. Of course, all these cases would not be appropriate for such a hospital as has been described, but a large percentage would. These figures are interesting as throwing some light upon the frequency of the disease as it is met with.

I have found the treatment at the out-patient service of the hospital very unsatisfactory for more reasons than one. It is very difficult to control the patient, to get him to follow systematically any course of treatment. The treatment is not perhaps very encouraging to them. I think there is no question that the treatment would be far more satisfactory, whatever may be its shortcomings, in an institution of the kind outlined by the reader, than by treatment in private practice or in hospitals. I think that an institution should be arranged on very economical principles. The cost for patients should be low, not over that which now obtains in most of our general hospitals, about ten dollars a week. If we estimate that the average patient could pay five dollars per week, that would leave five dollars per week as the cost of each patient to the hospital. I should rather doubt the advisability of farming them out, in the way suggested by Dr. Putnam, in private families. It seems to me the hospital-plan or cottage-plan would be by far the better system. Of course, that is a secondary matter.

Dr. F. W. Page: I notice that Dr. Baker speaks of epilepsy as generally incurable. I am aware that a great many physicians take a pessimistic view in regard to epilepsy; but I think that a great many cases have been cured, and a great many so far improved as to be useful to themselves and to their families. When I say *cured*, I speak it advisedly. Some patients may not have attacks oftener than once in six months, some once in a year. I can recall cases of epilepsy which have been cured, and have now remained so for many years.

There will always be difficulty attending the getting at the exact proportion of epileptics in the State. It is a matter of serious import to the family. A great many do not like to have it known that they have an epileptic in the family. In the establishment of a hospital it has occurred to me whether it is wise to have it known that it is an *epileptic* hospital, and whether such an hospital might not be joined to some nervine asylum, say, to be considered as a sort of home where patients could have proper care, and not have it definitely known that they had gone to a distinctively epileptic hospital.

The farming-out that has been suggested does not seem to me quite practicable.

I doubt whether it would be advisable to have a single hospital for both children and adults. It seems to me, as the State has provided a small hospital for the care of children, that this could be gradually enlarged, and another one could be built for the care of adults.

Dr. Walter Channing: The tendency of modern times has been toward some form of institution-provision for the weak and defective classes, whereby they could receive physical and moral treatment which would improve, or ameliorate their unfortunate condition.

At the foundation of this movement, long before

modern times, there existed the necessity that society should protect itself, and hence all kinds of dangerous persons were shut up like wild animals, that they might do no harm. Anything like reformation or moral treatment was of very little moment.

It is only necessary to refer to the treatment of insane persons to see this exemplified. Up to one hundred and fifty years ago the insane can hardly have been said to have had medical treatment. They were supposed to be possessed by evil spirits, and discipline and punishment were resorted to, to get rid of these spirits. At Bethlem (in London) the treatment was terrible, and nothing could have been worse than that at the Bicêtre.

St. Luke's in London was founded in 1751; and Letchworth says this was the first English hospital where curative principles were put into practice.

By a curious coincidence, the first step toward giving the insane hospital treatment in this country, was taken the same year, that being the date when the insane department of the Pennsylvania Hospital was established by legislative enactment.

Mr. Letchworth says of the latter: "At this time (1751), punishment in one form or another was, in general estimation, regarded as second only to bleeding, purging and dosing. Even when, in 1783, the philanthropic Dr. Rush resolved to relinquish the chains and whips of his day, he still adhered to "mild and terrifying modes of punishment," and on paying a visit to an insane man, deemed it one of the first requisites "to look him out of countenance."

During the next fifty years, as every one knows, rapid improvement in the treatment of the insane *in insane institutions under adequate supervision*, took place, though so much cannot be said of the treatment of the insane in almshouses and in their own homes, as the labors of Dorothy Dix amply testify. Still, up to within the last forty years, we will say, the total number of insane in institutions was not large.

In his admirable report made in 1855 to the legislature, Dr. E. Jarvis gave the total number of insane in the State as 2,632, of whom 1,141 were in hospitals. Thirty years after, or in 1885, there were 5,263, according to the general census, which was probably not nearly as accurate as the census of Dr. Jarvis. If it had been, the increase would probably have been larger still, say upward of 6,000, as suggested by the Report of the Board of Health, Lunacy and Charity for 1885.

On October 12, 1885, there were 3,862 insane persons in our State institutions, 3,350 of these being in State hospitals. In thirty years, it will be seen, there was an increase of over three hundred per cent. in the insane-hospital accommodation, the increase in the total number of insane persons being about half that. In the five years since 1885 the number has increased from 3,862 insane persons to 4,701 in our State institutions, a gain of 839 in this short period. The data furnished in a recent bulletin of the Census Bureau show an increase of 73.33 per cent. in the total number of insane persons treated in institutions during the nine years ending in 1889.

These few figures strikingly demonstrate how absolutely essential institution-treatment of the insane has become. They indicate that regular systematic treatment, under medical direction, and supervised by the State, is the chief means whereby a helpless class can receive adequate care.

What is true of the insane is equally true of the other defective classes, but the need, being less urgent, is only just becoming apparent.

Take the idiots, for example. From figures kindly furnished me by Dr. W. E. Fernald, Superintendent of the Massachusetts Asylum for Feeble-Minded, I find there were, in 1880, 76,895 idiots in the United States, only 2,429 of these being in institutions for idiots. During the last ten years, Dr. Fernald thinks the number of institutions for idiots has at least doubled.

We are at last waking up to the fact that idiots can be immensely improved by regular, systematic treatment in institutions, under proper supervision on the part of the State.

Do not the same general arguments hold good in the care of epileptics as in the care of the insane and idiots? They represent a degenerate type of human being prone to sink to a lower level if left uncared for; and, in sinking, they drag down others as well as themselves. They cannot be expected to improve any stock, but to act largely as a demoralizing influence on their environment. They are a weak link in the chain of evolution, and pretty certain to snap unless they can be relieved from the friction and strain of the sound links. Place them under favorable institution and supervisory treatment, and it is inevitable that marked amelioration in their condition will show itself, and the community will be relieved of a menace to the vitality of the race, and a burden on its shoulders which it does not now know how to bear.

These are times when we are making a conscious or unconscious struggle, perhaps, to strengthen the race on its physical side, and one most important means of doing this, is to weed out the weak and degenerate. Place them by themselves where they will do the least harm and receive the most good, and leave the healthy individuals in the community to establish and perpetuate a stronger, sturdier, and better type of man.

DR. BAKER: I only wish to say a word in conclusion. I am quite ready to admit all the criticisms Dr. Putnam has made. In my paper I made no claim, nor did I attempt to cover the whole field of epilepsy. I am too well acquainted with the different manifestations of epilepsy to advocate any such institution; especially of the semi-private kind which I have urged in my paper. I only maintain that a semi-private institution should be established for people of moderate means. I would make it purely voluntary.

The Chair then appointed as a committee to consider the matter brought up by the reader, Drs. T. W. Fisher, Morton Prince, Walter Channing, with Dr. Baker as one of the members of the committee.

AMERICAN GYNECOLOGICAL SOCIETY.

SIXTEENTH ANNUAL MEETING HELD AT WASHINGTON, SEPT. 22–24, 1891.

(Concluded from No. 24, page 629.)

DR. EDWARD A. JENKS, of Detroit, presented a paper entitled,

THE THERAPEUTIC ASPECT OF SOME OVARIAN DISORDERS.

The brilliant achievements of abdominal surgery within the past few years have fairly astonished the medical world. The percentages of recoveries after successful operations on the ovaries and Fallopian tubes

has been large; but there is always a spot on the face of perfection, and unfortunately to operate and to cure have not ever been synonymous terms. There are, undoubtedly, many fatal cases of laparotomy of which, not being published, the medical world has no knowledge. There are also many instances of recovery from operations where the patient is not benefited in the least. I am convinced that some patients whom the gynecologist, at the first examination, believes can only be cured by the removal of one or both ovaries and tubes often recover while the operation is being postponed until a more convenient season arrives. I believe an earnest plea for the salvation of ovaries should emanate from gynecologists or laparotomists themselves.

The author entered a strong protest to the wholesale removal of ovaries by every one considering himself capable of wielding a knife or tying a ligature, not only in large cities but in the villages and towns throughout the country. He believes Battey's operation is requisite in a limited number of cases to secure the establishment of health, but, on the other hand, that many women have been deprived of their ovaries without benefit. Operation for the relief of pain and for mental disorders in anæmic, neurasthenic and hysterical women frequently fails to accomplish the object sought for.

Upon the statements of many laparotomists it can be safely said that ovaries and tubes have been removed for pain or other symptoms when neither macroscopic nor microscopic examination indicated any diseased condition, and the patient restored to health in consequence.

The author suggested that there might be a psychical aspect to the question and related the following case: A lady suffering from hysterical symptoms and worn from long-continued pain attributed to diseased ovaries submitted to a laparotomy for their removal. After opening the abdomen, the surgeon failed to find any pathological condition warranting his completing the operation, and he immediately closed the abdomen. The patient, believing the ovaries had been removed, recovered from the operation, regained her former health and was entirely free from all further pain and discomfort.

It was the opinion of the late Austin Flint, that, to understand any form of disease, one must be familiar with its natural history. The most common of all pathological conditions of the uterus is simple catarrh, and is amenable to treatment. The tubes being offshoots of the uterus, and their mucous lining being continuous with that of the latter organ, it is safe to assert that this same catarrhal condition is found in the tubes. A simple catarrh of any mucous tract in the body, if neglected, often advances to the purulent stage; and I have no doubt that in not a few cases operated upon where pus was said to be found in the tubes, the fluid was simply a mucous secretion slightly purulent, the result of an undiscovered or neglected catarrhal salpingitis, which would have been amenable to treatment by therapeutic measures in its earlier stages. The fearful frequency of gonorrhœal salpingitis has caused many to overlook the fact that there is any other.

While the author fully appreciated the feats of abdominal surgery, he believed it was finer science to restore an organ to moderate usefulness and comfort than to remove the offender; but if treatment by therapeutic means would not bring about the necessary repair, then he would remove the organ without delay. He believed some of these cases had a malarial origin, and had treated some of them accordingly, with success.

Contrasting the rich and the poor in these cases, there is an exception as regards women of the poorest class. They cannot afford a long time of semi-invalidism. They do not complain of sterility, as they generally have more children than they can take care of. The quickest possible amelioration of their troubles is the thing desired; therefore, in these cases operation should be done at once after the operator has satisfied himself that the tubes and ovaries are hopelessly diseased. On the other hand, in the case of the rich who can afford to wait, time and judicious treatment well often bring about the desired result. The uterine sedatives, such as viburnum piscedia, apiol, some of the coal-tar preparations, bromides, etc., are serviceable in quite a variety of conditions. Electricity is valuable as a general nerve-tonic for the relief of pain and the dissolution of pelvic exudates and adhesions. Local treatment consists in painting the entire vaginal vault with a saturated solution of tincture of iodine, and keeping up continuous pressure by means of wool tampons.

The author referred to the paper of Dr. Wm. M. Polk, "On Certain Operations Designed to Preserve the Uterine Appendages" which, with one or two others of recent date, shows that there is an effort among progressive gynecologists toward a more pronounced conservatism in dealing with pelvic disease than has heretofore existed.

Dr. A. F. Currier recalled Dr. Battey's statement, that in the fifteen years he had been performing Battey's operation he had only operated fifty-four times, and, notwithstanding his success, he recommended more careful selection of cases in order to obtain the greatest benefit from the operation.

Dr. Coe emphasized the extreme danger of pregnancy and the puerperal state when attended with disease of the ovaries and tubes. He believed some of the obscure cases of puerperal septicæmia were due to pre-existing trouble in the tubes and ovaries which was lighted up by fresh inflammation.

Dr. J. M. Baldy believed that cases of insanity, hysteria and mental disturbances were practically non-operative cases, except upon the judgment of an experienced operative gynecologist.

Dr. J. M. Baldy, of Philadelphia, read a paper on

INSANITY FOLLOWING GYNECOLOGICAL OPERATIONS.

A careful inquiry from the heads of eight hospitals for the insane in the State of Pennsylvania, as to whether any female patients had been admitted into the hospital during the past five years on whom laparotomy was performed and insanity followed, resulted in the following: Out of a total of fifteen cases, in eleven cases there was pre-existing insanity, and the operation was undertaken in the main for the cure of the mental condition. In four cases insanity followed the performance of laparotomy; one died, and one recovered from the insanity. Many of the mild cases recover quickly; a certain proportion of the severe cases terminate fatally.

The author's conclusions were: (1) That cases of serious mental derangement might occur after operation in a person without a family history of insanity.

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(2) That mental disorders were no more likely to follow operation on the sexual organs than on other parts of the body. (3) That the accident was as frequent in men as in women. (4) That operations acted as a determining cause to mental derangement where there was a previous tendency. (5) Emotional disturbance is greater at the time of surgical operations. Where there is an inherited tendency to mental disease, laparotomy should only be undertaken with an understanding of the possible outcome, and should not then be done, unless the case was urgent. (6) Mental disturbance following gynecological operations is more frequent than is generally supposed.

DR. THADDEUS A. REAMY, of Cincinnati, read a paper on

SOME CLINICAL TESTIMONY AS TO THE ULTIMATE RESULTS OF REMOVAL OF THE UTERINE APPENDAGES.

The material on which the paper was based was restricted to cases of which the author had obtained a reliable history of the patient's condition for from two to five years after operation; excluding all cases of ectopic gestation, and tumors and malignant disease of the ovaries. The operations were performed from 1885 to 1889; there were 163 cases in all, 109 married, 10 widowed, 44 single. In 144 cases both ovaries and tubes were removed; in 15 cases but one ovary; in seven cases such extensive adhesions and destruction of tissue by disease that operation was discontinued after liberating, as far as possible, adhesions (cases doing well); in 12 cases appendages removed for arrest of hæmorrhage and growth of fibroid tumor (in none of these did the growth ascend above the umbilicus); in six cases for hystero-epilepsy, three of which were cured; in three cases for neurotic symptoms (one cured, one improved, one made worse). Pyosalpinx was found in but 17 cases out of the 163; parenchymatous salpingitis in 29 cases. Hydrosalpinx; with disseminated cystic degeneration of both ovaries, was found in 30 cases; of one ovary, in only 26 cases.

Results: Cured, 40 cases; improved in general condition, 60 cases; temporarily improved, but relapsed after a year or two, 30 cases; apparently worse after operation, 10 cases.

In every case where both ovaries were thoroughly removed menstruation ceased within six months, generally at once. In several cases uterine hæmorrhage occurred subsequently, but was not menstruation. Reliable testimony from 44 married cases showed, in 14, sexual appetite extinguished with menstruation; in seven, lessened; in 16, not influenced; in seven, markedly increased.

Conclusions: (1) Pyosalpinx does not exist in nearly so large a proportion of cases of pelvic disease in the middle and upper classes as is generally thought. (2) In cases from this class gonorrhœa does not play nearly so important a rôle in the cause of disease of tubes and ovaries as generally believed. (3) In properly selected cases, where otherwise incurable disease of the appendages exist, the results from surgical interference are not only satisfactory but brilliant. (4) In properly selected cases the removal of the uterine appendages offers more promise for the relief of hystero epilepsy than is generally conceded. (5) The practice should not be continued in the treatment of purely neurotic cases. (6) Many cases of manifest pelvic disease, including disease of the ovaries and tubes, which are cured by removal, could be as thoroughly and promptly and more satisfactorily cured by more conservative methods without the sacrifice of these important organs. (7) Many cases reported by operators as cured are found after a few years to be no better off than before operation. (8) The arrest of menstruation after the removal of the ovaries in so large a number of cases tends to confirm the belief that the ovaries bear an important relation to this function. (9) The influence of the removal of the appendages upon the sexual appetite has heretofore not generally been properly stated. (10) The relation of this influence to this function and the psychoses which so often followed to mar the otherwise satisfactory results of this operative procedure must now be fully conceded.

DR. JOSEPH TABER JOHNSON thought the removal of the appendages for a small bleeding fibroid was most justifiable and saved the patient from the horrors of a subsequent hysterectomy. He agreed with Dr. Reamy that the neurotic cases were the most difficult to treat. It might be well to give such patients the chance of the benefit that might follow operation, but always with the full explanation that there was no certainty that it would succeed. He doubted the advisability of operating for dysmenorrhœa, as there were many other methods of treating it successfully, and thought the operation should be restricted to cases where there was positive disease of the tubes and ovaries which could be determined by palpation.

DR. GILL WYLIE was surprised that Dr. Reamy had done such a number of incomplete operations. In his experience of over four hundred operations for diseased tubes and ovaries, he had never done an incomplete operation, and without losing many patients. He had had a return of menstruation in about five per cent. of his cases, due, he believed in every case, to other conditions of the uterus not cured by the operation.

DR. S. C. GORDON agreed with the writer in regard to neurotic cases. He had observed that the symptoms increased about the period of menstruation; when everything else had been done that could be done, without effect, he would operate. He was much opposed to the experimental method of treating these cases, curretting, tamponing, iodining, etc., for four or five years, in order to find out what the trouble was.

DR. COE thought true menstruation after the removal of tubes and ovaries a very rare occurrence, but he was convinced that profuse uterine hæmorrhage did sometimes continue for one, two or three years. He had operated three times on one woman to ascertain the cause of profuse hæmorrhage, but could demonstrate nothing beyond the presence of firm adhesions. Several small nodules were removed from the stumps of the tubes, but no ovarian tissue was found. Persistent hæmorrhage may be due to adhesions, or sometimes to cysts of the broad ligament, and in a very large class of cases to hypertrophic endometritis, the uterus not undergoing ordinary atrophy.

The following officers were elected for the ensuing year: President, Dr. John Byrne, of Brooklyn; Vice-Presidents, Dr. R. B. Maury, of Memphis, and Dr. Cornelius Kollock; Secretary, Dr. Henry C. Coe, of New York; Treasurer, Dr. Matthew D. Mann, of Buffalo; Council, Drs. J. W. Chadwick, Boston, M. T. Hanks, New York, S. C. Gordon, Portland, Maine, J. E. Janvrin, New York.

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THE ORIGIN AND NATURE OF INFECTIOUS DISEASES.[1]

The Croonian Lectures lately delivered at the Royal College of Physicians, London, by Dr. J. Burdon Sanderson, have been of uncommon interest. Dr. Sanderson chose as his subject "The Progress of Discovery relating to the Origin and Nature of Infectious Diseases"; and in the course of his inquiries entered upon the much debated question of "The Origin and Development of the Doctrine of the Infectious Nature of Inflammation," which was the topic of the first two lectures. These lectures are timely as effectually disposing of the notion (which, at least, must be abandoned till clearer light has been obtained) that the congeries of phenomena constituting inflammation is always and necessarily the result of microbe-invasion and microbe-action.

Regarding inflammation as a process characterized by the formation of pus, and having its seat in the capillaries, Dr. Sanderson shows that this is essentially the result of an injury done to the tissues by chemical agents of a certain intensity, and that the dictum of Weigert, "no suppuration without bacteria" is untenable. In fact, he asserts that the proximate cause of inflammation is always chemical, and to justify this proposition, he endeavors to show, first, that inflammation (that is, suppuration) can be produced by chemical agents in the absence of microphytes; and, secondly, that when it is produced by microphytes, the action is chemical.

The second point he thinks is sufficiently established by a series of observations, extending over about eight years, made by a number of highly competent bacteriologists. The essential feature of these methods of experiment is to introduce sterilized irritant liquids, either subcutaneously or into serous cavities, using precautions to preclude the entrance with these of microphytes. One of the first of the more exact investigations of the subject was that of Councilman, and consisted, first in charging capillary tubes with the liquid to be experimated with, closing the ends hermetically, and then, after sterilizing the tube and its contents, introducing it under the skin and closing the wound antiseptically. After it had remained for several days, it was broken between the fingers so as to discharge its contents subcutaneously. Similar experments were performed by Scheuerlen, who substituted fusiform for cylindrical tubes, and contrived to introduce the contained fluid very slowly into the subcutaneous tissue and into the peritoneal cavity. The chemical substances used were very various: mercury, nitrate of silver, turpentine, croton oil, etc. Mercury was found to produce suppuration in the dog, not in the rabbit. When injected hypodermically in the dog, each drop becomes the centre of a minute abscess. Silver nitrate, in five per cent. solution, produces suppuration in the dog but not in the rodent. Ammonia fails to produce pus in any animal. Turpentine produces suppuration with great certainty in the carnivora. The organic action of croton oil is similar but inferior. In all these experiments, the materials used are sterilized and introduced with the most rigid antiseptic precautions, and the pus obtained is tested by cultivation, and cover-glass preparations are subjected to microscopic scrutiny. In every instance, provided that the experiment has been properly performed, the inflammatory-exudation liquid is sterile. These experiments seem to show, not only that suppuration can be brought about without the concurrence of microbes, but that the readiness with which pus is formed depends on conditions which belong to the animal, rather than the noxa. In the dog, a sterile abscess can be produced at ease with such different agents as mercury and turpentine, but it is much more difficult to obtain the result in a rodent.

The other point in Dr. Sanderson's contention, that when micro-organisms are directly concerned in the production of inflammation, the mode of action and the proximate cause are still chemical, is based on the fact that not only in the case of staphylococcus, but in that of many other micrococci, the symptoms which result from the presence of the microphytes themselves in the living organism, can also be produced by the soluble chemical products of the vegetation. So long ago as 1878, Pasteur showed that cultures of the *microbe générateur du pus*, which had been sterilized, were as capable of producing abscesses as living cultures are, and that the resulting pus was sterile; but it was not until a few years ago (1887) that Grawitz made similar experiments with pure cultures of pyogenic microbes, particularly with the ordinary staphylococcus. Since then various other experimenters have investigated the subject in relation to this and other pus-producing microphytes, with the general result that in carnivora sterile abscesses can be produced with the same certainty by the injection or introduction of devitalized cultures of staphylococcus as by turpentine or mercury. In rabbits, where a Cohnheim's tube, charged with such sterilized cultivation, is used, the same phenomenon presents itself as if the tube con-

[1] The Croonian Lectures, for 1891.

tained croton oil — leucocytes creep in at the end and die and form pus.

From a consideration of the more recent and accepted investigations as to the morbific agents in tuberculosis, typhoid fever, pneumonia, tetanus and diphtheria, as well as in relapsing fever, splenic fever of animals and inflammation or, its characteristic result, suppuration, Sanderson is disposed to deduce two types of morbific action: biotic and toxic. Biotic agents act mainly by virtue of their endowments as living organisms; toxic agents chiefly by virtue of the toxines which they produce. That is, the *nexus* between the morbific agent and the morbid process is, in the one case, dissemination, in the other diffusion.

As to the causal relation between microphytes and the diseases they produce, it is necessary to bear in mind, also, the possible substitution, under certain conditions, of one species for another.

Recent researches have, furthermore, taught that the toxicity of a disease-producing microphyte is even more essential to its effects than its adaptability to a living nutritive medium. The question of infection, therefore, has become more and more chemical and less morphological. The employment of the bacteriological method is, however, none the less necessary, and the pathologist must continue to perfect himself in the technique which Koch has created. If the questions at issue appear, for the moment, to be chiefly chemical, it is only that we have passed from the form to the substance, from the agent to the action. Our interest in microphytes is not as botanical species, but as makers of toxines; and in toxines is not as chemical compounds, but as disease-producers. The contest in the organism between invading microphytes and the living elements of the invaded territory is not a hand-to-hand fight between tissue elements and microphytes (Metschnikoff), but one in which both act (so to speak) at long range, in which the weapons are poisons and counter-poisons, toxines and anti-toxines — words implying that the pathological endowments of these bodies are antagonistic. We have on the one hand, products allied to modern proteids, to ptomaines or leucomaines, on the other hand, the old *vis medicatrix naturæ* or *vis protectrix*, most recently designated as a component of the liquor sanguinis (Behring and Kitasato).

EPIDEMIC INFLUENZA.

IT seems to be the general impression that epidemic influenza has once more made its appearance in the United States, though as yet it has not assumed a serious aspect.

It is just two years since the violent outbreak of 1889–'90 commenced. At that time the epidemic followed mild and damp weather, and as this season has been remarkably dry, the weather would seem, as in times past, to have very little to do with its production. In his report on the health of the city of New York, for the week ending December 12th, Deputy Registrar Nagle says: "Influenza, which was reported as causing a large number of deaths in some European cities and a few cities of this country, was reported to have caused three deaths in this city during the week. The deaths from this cause were associated with other affections, and were in very old persons. Pneumonia, which is a most frequent complication in this affection, caused 112 deaths, which is an increase of 18 deaths over the preceding week, and is ten above the average of the corresponding week of the past five years."

During the week, 734 deaths were reported in New York, which is an increase of 59 over the week ending December 5th, and represents an annual death-rate of 22.48 to every 1,000 of the estimated population. The number of deaths is, however, 25 less than the average for the corresponding week during the past five years.

The Boston Board of Health does not officially recognize the presence of epidemic influenza in the city, but admits the apparent increase of catarrhal troubles and pneumonia during the last month. This, in itself, is not unusual at this season of the year, but practitioners are meeting with increasing numbers of cases exhibiting sore throats associated with pains in various parts of the body and digestive disturbances, which recall in a mild way our previous experience. There is no occasion for sensational alarm. But, bearing in mind the reports from all over Europe; from Great Britain, where the east coast of Scotland and the west coast of England have been especially visited; from Australia and New Zealand — reports which indicate the probability of a pandemic — it behooves the old, the feeble, and those who habitually overwork, to live prudently.

MEDICAL NOTES.

NO TRICHINÆ IN AMERICAN PORK. — In the German Reichstag recently, the Minister of the Interior said that no trichinæ had been found in pork imported from the United States, since the bill providing for the inspection of pork had become a law.

MEMOIR OF DR. FORDYCE BARKER. — The many friends of the late Dr. Barker will greatly appreciate the memoir by Dr. William T. Lusk, which appeared in the *Medical Record* of November 21st. Dr. Barker's relations to the profession were such, that this short sketch of his personal life will be read with interest by physicians in all parts of the world.

MARINE-HOSPITAL SERVICE. — The report of the Supervising Surgeon-General shows that during the last year there were 52,992 sailors treated in the various marine hospitals and dispensaries. There were 1,182 pilots examined for color-blindness, of which number 29 were rejected. There were 1,664 vessels inspected at the national quarantines, of which 113 were detained for disinfection. At the Gulf Quarantine Station, on Chandeleur Islands, 46 vessels, badly infected with yellow fever, were held and disinfected, and twelve yellow-fever patients were taken from these

vessels into the lazaretto. As a result not a single case of yellow fever developed on the coast guarded by this quarantine. Attention is called to the increased number of cases of leprosy discovered in the United States, and suggests the necessity of a national asylum. Owing to the prevalence of cholera in the East, and to want of uniformity in the local health regulations at several of the ports of entry in the United States, a circular has been recently issued prohibiting the entry of rags imported from Marseilles unless previously disinfected.

Protection for Railroad Employees. — In his annual message to Congress the President says: "I have twice before urgently called the attention of Congress to the necessity of legislation for the protection of the lives of railroad employees, but nothing has yet been done. During the year ending June 30, 1890, 369 brakemen were killed and 7,841 maimed while engaged in coupling cars. The total number of railroad employees killed during the year was 2,451, and the number injured, 22,320. This is a cruel and largely a needless sacrifice. The Government is spending nearly $1,000,000 annually to save the lives of shipwrecked seamen; every steam vessel is rigidly inspected and required to adopt the most approved safety appliances." He recommends the compulsory introduction of automatic couplings for frieght cars.

Morals in the District of Columbia. — Concerning this subject the President says: "The Attorney-General and also the Commissioners of the District of Columbia call attention to the defectiveness and inadequacy of the laws relating to crimes against chastity in the District of Columbia. A stringent code upon this subject has been provided by Congress, for Utah, and it is a matter of surprise that the needs of this district should have been so long overlooked."

NEW ENGLAND.

Boston City Hospital. — The Common Council has adopted an order to borrow $136,500 for the use of the City Hospital, to be expended as follows: brick walls, $10,500; electric-light plant and boiler-house, $35,000; estates, East Chester Park and Harrison Avenue, $65,000; alterations in the above, $10,000; stable and disinfecting building, $16,000.

Harvard Medical School Association. — The first bulletin of the Association, containing the constitution, list of officers, records of the first meeting and the annual dinner, has just appeared. The Association was formed last spring for the purpose of furthering the interests of the school and of the graduates. It is proposed to publish in the spring a complete catalogue of the members. The canvass among the graduates has necessarily been very incomplete, and many have never heard of the Association. The membership now numbers 835. All graduates of the school who have not received the above-mentioned bulletin are requested to send their names to the secretary, Robert W. Lovett, 379 Boylston Street, Boston.

Immigrants at Portland. — For six months, beginning November 15th, the Allan and Dominion steamship lines, land their passengers at Portland, Me., instead of at Halifax. It is estimated that they will bring thirty-five hundred immigrants, who by the law passed by the last Congress, should receive medical inspection. For this purpose a surgeon of the Marine-Hospital Service has been detailed.

NEW YORK.

The Execution of Loppy.— All the medical witnesses present at the execution of the murderer Loppy at Sing Sing prison, on December 7th, who have expressed an opinion on the subject, agree in the statement that death was painless and instantaneous, although, by way of precaution against any possible doubt, the application of the electrical current for a few seconds, was repeated several times.

Post-Graduate School Lying-in Department. — Through the generosity of Mrs. C. P. Huntington and other ladies, the New York Post-Graduate Medical School and Hospital has been enabled to open a well-equipped lying-in department, which is under the general direction of Dr. C. A. Ramdohr, and the nurses for which are supplied from the College Training School for Nurses.

The Medico-Legal Society. — At a meeting of the Medico-Legal Society held December 9th, H. M. Somerville was elected President, Mr. Clark Bell, who has so long held this position having declined a renomination. The other officers elected were as follows: First Vice-President, Dr. Peter Bryce, of Alabama; second Vice-President, Albert Bach; Corresponding Secretary, Moritz Ellinger; Secretary, Clark Bell; Treasurer, Dr. Matthew D. Field; Chemist, Prof. H. A. Mott, Jr.; Permanent Commission, Judge John F. Dillon, of New York, and Dr. W. W. Godding, of Washington, D. C.; Librarian, Dr. Thomas Chelland; Assistant Librarian, Dr. G. Bettini de Moise; Curator and Pathologist, Dr. J. Clark Thomas.

Dr. Joseph D. Bryant, who has been Surgeon-General of the State under Governors Cleveland and Hill, has been reappointed by Governor-elect Flower to the position which he has filled with so much credit to himself and the militia service.

Miscellany.

ADAMKIEWICZ TREATMENT OF CANCER.

A few months ago we noted that the Austrian Minister of Education had invited Professor Adamkiewicz to come to Vienna, and had placed some of the material in the surgical clinic at his disposal. This was in consequence of an announcement by Adamkiewicz that he had discovered a cure for cancer. He did not divulge his method, and it is even now still a secret, except that it is through the medium of subcutaneous injections.

In summing up a recent report from Vienna, the

Medical Press, November 25th, says in a leading article that in a ward under the charge of Professor Billroth, Adamkiewicz was permitted to experiment upon a patient who was believed to be affected with epithelioma of the upper and lower lids of the right eye. The history showed that the disease was rapidly spreading, and, under the circumstances, therefore, the case seemed a most suitable one for testing the value of the new treatment. On October 25th the professor took the patient in hand, the result being that on November 12th the sufferer was discharged from the hospital — cured. In other words, after eighteen days treatment an epithelioma of the upper and lower lids was pronounced by Adamkiewicz to have perfectly cicatrized over. Naturally enough, upon this matter Professor Billroth had something to say, and what he has said can scarcely be deemed to be enthusiastically favorable to this latest form of cancer curing. Billroth remarked that he had no doubt about the case being one of epithelioma. It was true also that the growth had cicatrized at the centre and in the periphery. But whether it was a growth possessing distinctly malignant characters was open to some doubt. No signs of secondary infection had been noticed, nor was there any enlargement of the nearest lymphatics. Again, it had repeatedly cicatrized after treatment by caustics and "scrapings." Upon the whole Billroth contended that Adamkiewicz's treatment had accomplished nothing, and that our knowledge of the subject of the treatment of cancer had not been in any way advanced by these experiments. Professor Kaposi said that he had treated the same patient fifteen years ago for the same kind of growth, and obtained a successful result by the application of caustic. He quite agreed with Billroth in the belief that the epithelioma was not a malignant formation in the usual acceptation of the term. He expressed a wish to know how Adamkiewicz performed his experiments — whether the injections were made locally or otherwise. Still more condemnatory of the new treatment were the remarks of Dr. Franks, who spoke on behalf of Professor Albert. According to the latter observer, the experiments conducted in his clinique by Professor Adamkiewicz appeared to have very little influence over the new growths, and he believed that massage or any other mechanical irritation would have the same effect in reducing the size of the tumors. There was nothing, in his opinion, in the new treatment which could be considered of any real value.

INFLUENZA.

ACCORDING to the *Lancet* a noteworthy difference between the present outbreak of influenza and those experienced last spring and the original epidemic of the winter of 1889–90 is the comparative slowness of its diffusion over the country. It was, in November, mainly confined to two widely separated parts of the kingdom, Cornwall and the eastern counties of Scotland. It is remarkable that children are being attacked almost as much as adults. It is reported to be very prevalent in St. Petersburg and Berlin, whilst at Hamburg it reached "alarming proportions," and the weekly mortality of the city and its suburbs exceeded the average by 280. In France it is especially prevalent at Bordeaux, where many deaths among the aged have occurred. It has, also, appeared in Paris.

In showing some patients to his students a few weeks ago Professor Gerhardt, of Berlin, said,[1] "The morbid symptoms which we comprehend under the collective name of influenza have repeatedly been observed before, and several epidemics of the so-called 'grippe' (those of 1847 and 1876, for instance,) are on record. Such a pandemic, however, as prevailed two years ago had not occurred for a generation, and we had to deal with something quite new and unknown. It came to us from the East. In May, 1889, it broke out in Bokhara, rapidly overran Russia in Asia, and came to St. Petersburg in September. The disease spread rapidly all over Europe, radiating over the provinces from Berlin, Vienna, Paris, and London, and remaining mostly three or four weeks, never more than two or three months, in one place. Its course ran unmistakably from east to west; from us it went to America and then on to Eastern Asia. Now it seems to have arrived among us again after its journey round the world. The symptoms are remarkably various. The malady often takes an easy course, and is in general not very dangerous to robust people. It begins in most cases with high fever, which rapidly abates. In the graphic representation of the progress of the fever the steep and narrow one-day's curve seems to be characteristic. A vast number of sequelæ have been observed. Already existing diseases, such as pulmonary tuberculosis and diseases of the heart, often take an unusually rapid and fatal course under the influence of influenza. Influenza must be reckoned among the acute infectious diseases, and its contagious character may be regarded as proved. The spread of the disease is uncommonly rapid, and the time of incubation is often less than twenty-four hours, never more than two or three days. The question whether one attack protects the patient against future ones cannot be definitely answered; some immunity there must be, for the epidemic never lasts very long. Children are seldom attacked, sucklings never. Some people are temporarily insusceptible. Doctors, for instance, have often fallen ill at the end of the epidemic. The age from fifteen to twenty-five seems to be the most susceptible. No specific against the disease is known; the doctor must therefore confine himself to symptomatic treatment."

CONSANGUINEOUS MARRIAGES.

DRS. LOUIS and GUSTAV LANCEY have published an article on this subject in *L' Union Médical*, No. 24, 1891.[2] It is based upon the study of a little community in the north of France in which all the inhabitants are related to each other. Probably the majority of the early marriages were among blood relations, and now twenty-four per cent. of the marriages are among cousins of not more than two removes. Of these marriages, sixty-three in four years, there were defects in but two children. In both of these instances, there seems to be some reason other than the relationship for the defect. Sixteen per cent. of the marriages were without fruit, and in about eight per cent. there had been but one child. The authors conclude that marriage of blood relations tends to the diminution of the birth-rate, but that it has no prejudicial influence upon the children that may be born in such union.

[1] Lancet, November 28th.
[2] University Medical Magazine, December.

THERAPEUTIC NOTES.

URTICARIA. — Quinquand treats urticaria as follows:[1] Internally alkalies, or if they are nor sufficient, arsenic or naphthol. Externally a wash composed of

℞	Acidi boric	3 i.
	Chloral	3 i.
	Aquæ	3 vi. M.

or a powder

℞	Acidi salicylici	3 i.
	Zinci oxidi	3 iii.
	Amyli	3 vi. M.

TREATMENT OF VOMITING OF PREGNANCY BY ELEVATING THE PELVIS. — Grant[2] reports cases of obstinate vomiting of pregnancy in which great benefit was obtained by lowering the head and shoulders, and placing several pillows under the sacrum, and continuing the position at intervals for a few hours.

BENZINE AS A PREVENTIVE OF TRICHINOSIS. — Putlee[3] reports that being called to see twenty-seven persons who had a few hours before eaten a pig, which was discovered to be full of trichinæ, he administered forty minims of benzine in capsules, followed by a cathartic. Eight months later no case of trichinosis had occurred among them.

STRYCHNINE FOR DRUNKENNESS.[4]— In consequence of the remarkable success claimed in the treatment of drunkenness with hypodermic injections of strychnine, this method of treatment was tried in the city hospital in Görlitz, Silesia, but the results were almost entirely negative.

Correspondence.

SOME POINTS IN OCULAR THERAPEUTICS.

SALEM, December 5, 1891.

MR. EDITOR: — It would have been well for the man who was led into my office last week, because of occluded pupils after iritis, if his doctor had read the timely article by Dr. Cheney that appeared in the JOURNAL of June 4th. At present it should surely be known by every practitioner, that his chief effort in treating a case of iritis is to keep the pupil dilated.

Occasionally some other mydriatic may have to be substituted for the salts of atropia. For example, in May, 1889, a young gentleman sought relief because of specific iritis in his right eye, of a week's duration. As the iris was attached to the capsule of the lens in places, a solution of atropine sulphate was ordered (0.15–15.0), which soon gave a round pupil. But at the end of a week there was an intense erythema of the lids and cheek. Possibly this may have been increased by the frequent applications of hot water. However, on suspending the instillations of the atropine and substituting in its place duboisine sulphate (0.03–4.0), the swelling soon subsided and the case went on to recovery (with normal vision). Last year a married sister of the above used atropia to relieve the pain in scleritis, and she was affected by it as her brother had been.

In the JOURNAL of October 31, 1878, the writer called attention to the peril that attends the indiscriminate use of atropia, especially when there is a possibility of the presence of glaucoma. Since then other patients have been seen where atropia was prescribed most unhappily. One was an old woman, whose physician had ordered this agent to be used so frequently that a woman was employed to drop it between the lids during the night. When she came to me she was unable to count fingers, though she could locate a lighted lamp, and the eyes presented the usual symptoms of glaucoma. The trouble had lasted twelve days. Eserine sulphate (0.10–15.0) having no effect, she was taken to Salem, where an iridectomy was done on both eyes, under cocaine (which did not render the operation painless, and this has been my experience in operating in glaucoma). When last seen her vision was two-thirds of normal.

If the use of a strong solution of atropia (either with or without cocaine) in iritis causes dryness of the throat, it is well to have the patient press a finger over the caruncle when the drop is instilled, and to keep up the pressure for a moment till the surplus has been wiped away. For an eye-dropper, experience for some years has convinced me that nothing is better, on many accounts, than a teaspoon. Patients are told to pour some of the liquid into the spoon and then to pour it back into the phial, that a drop will remain on the tip of the spoon which can then be dropped on the inside of the lower lid, which is to be held down while winking takes place, and the eye-water is thus largely absorbed.

The danger of infection should always prevent the use of an old medicine dropper. An alarming phenomenon has been noted by several patients who have come to me because of widely dilated pupils. On inquiring, it was found that a dropper had been used in treating a slight conjunctivitis that years before had been employed in an iritis. It is almost impossible to remove atropia from an old dropper, that is from the rubber nipple.

Very respectfully, D. COGGIN.

[1] Deutsche med. Woch.
[2] Montreal Medical Journal, June.
[3] Deutsche med. Woch.
[4] Deutsche med. Woch., September 24th.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, NOVEMBER 28, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Diarrhœal diseases.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	671	217	17.44	18.48	1.64	1.34	7.15
Chicago	1,099,850	441	162	19.50	14.74	1.59	6.12	7.03
Philadelphia	1,046,964	435	141	16.32	12.64	.69	.69	11.26
Brooklyn	806,343	336	117	15.18	21.43	.89	2.38	5.65
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,477	177	61	12.43	21.47	1.69	1.13	7.34
Baltimore	434,439	191	72	15.70	15 18	1.57	.52	9.95
Cincinnati	296,908	125	38	15.20	24 00	—	1.60	10.40
Cleveland	262,000	79	22	15.19	5.06	1.26	3.79	7.59
New Orleans	242,039	122	41	10.65	5.74	7.38	.82	.82
Pittsburg	240,000	81	30	28.39	13.58	2.47	11.11	11.11
Milwaukee	240,000	—	—	—	—	—	—	—
Washington	230,392	111	37	10.81	14.41	.90	—	7.21
Nashville	76,168	22	7	36.36	18.18	13.63	13.63	—
Charleston	63,165	39	11	5.13	20.51	—	2.56	2.56
Portland	36,425	10	0	10.00	10.00	—	10.00	—
Worcester	84,655	34	12	14.71	17.64	2.94	—	2.94
Lowell	77,696	28	8	10.71	3.57	7.14	3.57	—
Fall River	74,398	30	10	20.00	16.67	3.33	10.00	6.67
Cambridge	70,028	27	5	—	18.52	—	—	—
Lynn	55,727	23	6	17.39	4.35	—	—	—
Lawrence	44,654	22	10	22.73	18.18	4.55	4.55	13.65
Springfield	44,179	16	5	18.75	—	6.25	—	6.25
New Bedford	40,733	16	9	6.25	6.25	—	—	—
Salem	36,801	8	0	—	12.50	—	—	—
Chelsea	27,909	13	5	23.07	—	—	—	23.07
Haverhill	27,412	8	2	—	25.00	—	—	—
Brockton	27,294	—	—	—	—	—	—	—
Taunton	25,445	10	2	10.00	20.00	10.00	—	—
Newton	24,379	4	0	—	25.00	—	—	—
Malden	23,031	8	2	12.50	—	—	—	12.50
Fitchburg	22,037	6	3	16 67	16.67	—	—	16.67
Waltham	18,707	7	0	—	14.28	—	—	—
Pittsfield	17,281	4	1	—	—	—	—	—
Quincy	16,723	1	0	—	—	—	—	—
Newburyport	13,947	11	4	18.18	36.36	—	—	18.18
Medford	11,079	5	0	—	20.00	—	—	—
Clinton	10,424	5	0	—	—	—	—	—
Hyde Park	10,193	4	0	—	25.00	—	—	—
Peabody	10,158	2	0	—	—	—	—	—

Deaths reported 3,132: under five years of age 1040; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhœal diseases, whooping-cough, erysipelas and fevers) 502, acute lung diseases 497, consumption 369, diphtheria and croup 231, scarlet fever 79, typhoid fever 75, diarrhœal diseases 53, cerebro-spinal meningitis 19, puerperal diseases 13, whooping-cough 9, measles 8, erysipelas 8, malarial fever 7.

From scarlet fever New York 29, Brooklyn 14, Philadelphia 12, Chicago 10, Baltimore 4, Boston 3, Cincinnati, Pittsburgh and Worcester 2 each, and Lynn 1. From cerebro-spinal meningitis Chicago 6, Washington and Lynn 3 each, Cleveland 2, New York, Brooklyn, Cincinnati, New Orleans and Worcester 1 each. From puerperal fever New York 7, Brooklyn 3, Philadelphia, Baltimore and Pittsburgh 1 each. From whooping-cough Chicago and Philadelphia 2 each, New York, Brooklyn, Boston, Baltimore and New Bedford 1 each. From measles New York 5, Chicago 2, Baltimore 1. From erysipelas New York 3, Brooklyn 2, Chicago, Philadelphia and Springfield 1 each. From malarial fever New York 3, Nashville 2, Cincinnati and New Orleans 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending November 21st, the death-rate was 20.7. Deaths reported 3,741: acute diseases of the respiratory organs (London) 384, whooping-cough 112, measles 106, diarrhœa 65, diphtheria 48, fever 46, scarlet fever 35, small-pox 1.

The death-rates ranged from 11.5 in Huddersfield to 31.4 in Sunderland, Birmingham 19.5, Bristol 24.4, Hull 18.9, Leeds 16.8, Leicester 16.8, Liverpool 27.1, London 20.1, Manchester 22.5, Newcastle-on-Tyne 25.9, Nottingham 15.9, Sheffield 18.1 Wolverhampton 24.6.

In Edinburgh 28.7, Glasgow 34.5, Dublin 33.9.

METEOROLOGICAL RECORD,

For the week ending November 28, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps:—

Date.	Barometer	Thermometer.			Relative humidity.			Direction of wind.		Velocity of wind.		Weather. *		Rainfall in inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...22	30.25	48	55	42	92	76	84	S.E.	S.	2	12	O.	O.	
M..23	29.70	54	60	47	84	88	86	S.	S.E.	7	22	R.	R.	.05
T..24	29.60	50	54	46	65	53	59	S.W.	S.W.	20	19	C.	C.	.05
W..25	29.97	42	49	36	62	58	60	S.W.	S.W.	11	18	C.	C.	
T..26	30.04	38	42	34	69	79	70	W.	N.	5	*	C.	R.	.01
F..27	29.64	42	49	36	92	68	80	W.	S.	11	9	O.	C.	1.24
S..28	29.84	44	56	33	80	66	73	S.W.	N.	18	16	O.	O.	.02
	29.86	45	52	39	76	70	73			11	15			.22

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 5, 1891, TO DECEMBER 11, 1891.

CAPTAIN WALTER W. R. FISHER, assistant surgeon, relieved from duty at Fort Assininiboine, Montana, and ordered to Fort Columbus, N. Y. H., for duty at that station.

FIRST-LIEUT. CHARLES E. WOODRUFF, assistant surgeon, is relieved from duty at Fort Missoula, Montana, and ordered to Fort Assininiboine, Montana, for duty at that station.

By direction of the President, MAJOR JULIUS H. PATOZKI, surgeon, U. S. A., will report in person to the President of the Army Retiring Board, at Fort Leavenworth, Kansas, for examination by the Board.

CAPTAIN ARTHUR W. TAYLOR, assistant surgeon, U. S. A., having been found incapacitated for active service, is granted leave of absence until further orders on account of disability.

FIRST-LIEUT. PAUL SHILLOCK, assistant surgeon, U. S. A., is granted leave of absence for fifteen days.

The resignation of CAPTAIN WILLIAM E. HOPKINS, assistant surgeon, U. S. A., has been accepted by the President, to take effect April 5, 1892, and granted leave of absence to include that date.

MAJOR PASSMORE MIDDLETON, surgeon, U. S. A., having been found incapacitated for active service, by reason of disability incident to the service, is by direction of the President, retired from active service.

FIRST-LIEUT. JAMES D. GLENNAN, assistant surgeon, granted leave of absence for one month, with permission to apply for one month's extension.

CAPTAIN HENRY G. BURTON, assistant surgeon, ordered to report to the President of the Army Retiring Board, Los Angeles, California, for examination by the Board; on conclusion of his examination will return to his station, San Diego Barracks, California.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING DECEMBER 12, 1891.

LEWIS MORRIS, assistant surgeon, detached from the Navy Yard, League Island, and to the Receiving-ship "St. Louis," at that yard.

H. N. T. HARRIS, assistant surgeon, detached from the Receiving-ship "St. Louis," and to the Navy Yard, League Island, Pa.

RECENT DEATHS.

FRANK DONALDSON, M.D., died in Baltimore, December 8th, aged sixty-eight. He graduated from the University of Maryland in 1846. In 1866 he became Professor of Physiology and Hygiene and Clinical Professor of Diseases of the Throat and Chest. The former chair he resigned in 1880, and the latter in 1888, since which time he has been Emeritus Clinical Professor. He was consulting physician to the Johns Hopkins Hospital.

MELANCTHON L. RUTH, M.D., Surgeon, U. S. N., died in New York, December 14th, aged forty-seven. He was born in Philadelphia in 1844, and was appointed Assistant Surgeon in the Navy in 1868. He became Surgeon in 1880, and since 1883 has been on duty in Washington.

W. F. PECK, M.D., Professor of Surgery in the Iowa State University Medical School, and Surgeon-in-Chief of the Chicago, Rock Island and Pacific Railroad, died in Chicago, December 13th. He graduated from Bellevue Hospital, New York, in 1862.

BOOKS AND PAMPHLETS RECEIVED.

Bulletin of the Harvard Medical School Association, Number 1. 1891.

Counting the Nation by Electricity. By T. C. Martine. Reprint. 1891.

The Medical News Visiting List, 1892. Philadelphia: Lea Brothers & Co. 1891.

Electricity in Carcinoma. By Robert Newman, M.D., New York. Reprint. 1891.

Intubation of the Larynx. By Carl H. von Klein, A.M., M.D., Cleveland, O. Reprint. 1891.

Beitrag zur Würdigung der medikamentösen Seifen von Dr. F. Buzzi. Hamburg: Verlag von Leopold Voss. 1891.

Cancer of the Cervix Uteri. Result in its Treatment by High Amputation. By William H. Baker, M.D. Reprint. 1891.

Amœbic Dysentery. By William T. Councilman, M.D., and Henri A. Lafleur, M.D. The Johns Hopkins Hospital Reports.

Transactions of the Association of American Physicians, Sixth Session, held in Washington, D. C., September 22–25, 1891.

Salem Witchcraft in Outline. By Caroline E. Upham. Second edition. Salem, Mass.: The Salem Press Publishing and Printing Co. 1891.

Saunder's Pocket Medical Formulary, with an Appendix Containing Numerous Tables. By William M. Powell, M.D. Philadelphia: W. B. Saunders. 1891.

Report of the Surgeon-General of the Army to the Secretary of War for the Fiscal Year ending June 30, 1891. Washington: Government Printing Office. 1891.

The Physician as a Business Man, or, How to Obtain the Best Financial Results in the Practice of Medicine. By J. J. Taylor, M.D., Philadelphia. The Medical World. 1891.

On Dermatol, a Proposed Substitute for Iodoform — Its Use in Surgical Practice. By Charles A. Powers, M.D., Surgeon to the Out-Patient Department, New York Hospital. Reprint. 1891.

A Manual of Venereal Diseases, Being an Epitome of the Most Approved Treatment. By Everett M. Culver, A.M., M.D., and James R. Hayden, M.D. Philadelphia: Lea Brothers & Co. 1891.

The Microscope and its Revelations. By the late William B. Carpenter, C.B., M.D., LL.D., F.R.S. Seventh edition by the Rev. W. H. Dallinger, LL.D., F.R.S. Philadelphia: P. Blakiston, Son & Co. 1891.

A Practical Treatise on the Diseases of the Ear, Including a Sketch of Aural Anatomy and Physiology. By D. B. St. John Roosa, M.D., LL.D. Seventh revised edition. New York: William Wood & Co. 1891.

Address.

THE PRINCIPAL TYPES OF PHYSICAL TRAINING COMPARED.[1]

BY EDWARD MUSSEY HARTWELL, PH.D., M.D.,
Director of Physical Training in the Public Schools of Boston.

(Concluded from No. 25, page 644.)

In Guhl and Koner's "The Life of the Greeks and Romans," we find the gymnasia mentioned first among the public buildings of Greece, because they were "centre-points of Greek life." The authors go on to say: "Games and competitions formed a chief feature of their religious festivals. This circumstance reacted both on sculpture and architecture, in supplying the former with models of ideal beauty, and in setting the task to the latter of providing suitable places for these games to be celebrated. For purposes of this kind the palæstræ and gymnasia served. In earlier times these two must be distinguished. In the palæstra, young men practised wrestling and boxing. As these arts were gradually developed, larger establishments, with separate compartments, became necessary. Originally, such places were kept by private persons; sometimes they consisted only of open spaces, near a brook if possible, and surrounded by trees. Soon, however, regular buildings, gymnasia, became necessary. At first they consisted of an uncovered court surrounded by colonnades, adjoining which lay covered spaces, the former being used for running and jumping, the latter for wrestling. In the same degree as these exercises became more developed, these institutions grew in size and splendor.

"Minute descriptions of these establishments, by Greek authors, we do not possess, but the important facts are known to us from occasional remarks, particularly in the Platonic dialogues. There we find mentioned the *ephebeion*, where the youth used to practice; further, the bath, to which belonged a dry sweating bath, for the use of both wrestlers and visitors. The *apoduterion* was the room for undressing. In another room, the *elaiothesion*, the oil was kept for rubbing the wrestlers, and there possibly this rubbing itself took place. In the *konisterion* the wrestlers were sprinkled with sand, so as to give them a firmer hold on each other. The *sphairisterion* was destined for games of ball, while other passages, open or covered, were used for practice in running, or simply for walking. A particular kind of covered passage were the *xustoi*, which had raised platforms on both sides for the walkers, the lower space being used by the wrestlers.

"At Athens the gymnasia were public institutions supported by public or private means, at which *epheboi*, youths old enough for military service, and men spent a part of the day in athletic exercise and in instructive and social intercourse. These were the *Lukeion* (Lyceum), the *Kunosarges*, the *Akademia* (Academy), the *Ptolemaion*, the splendid gymnasium of Hadrianus, and the small gymnasium of Hermes. The number of palæstræ at Athens was still greater. They were all private institutions kept by single *paidotribai*, and destined for the athletic education of boys only. In smaller cities the joint practice of youths and men was frequently inevitable."

[1] The substance of this article was delivered on May 9, 1891, as the last of Six Hemenway Lectures on Physical Training, by the writer, at the Old South Meeting House, Boston.

The teachers of gymnastics among the Athenians were known as *gumnastai* and *paidotribai*; the former having to superintend the general development and training of the body, while the latter directed the single exercises. The *sophronistai* were responsible for the good behavior of the boys. The whole *gumnasion*, and all its teachers, was under the charge of a superintendent, termed the *gumnasiarchos*. The principal exercises taught in the palæstra and the gymnasium were running, leaping, wrestling, throwing the discus, throwing the spear, boxing, and the pancration, a combination of boxing and wrestling.

Various games of ball were in vogue, and much attention was paid to swimming and bathing. It is held by some that the Greeks at times engaged in boat-racing. If so, the sport formed no part of the athletic canon. The Greek training was severe; that of candidates for the Olympic games lasting for ten months. It was mostly conducted in the open air, often under a blazing sun. In their practice exercise and in their matches, the athletes were naked. They were oiled and sanded before their exercise, and scraped with a strigil, shampooed and bathed after it. Their dietary was also carefully regulated. So, too, were their hours of sleep and practice. In none of our five national systems of exercise has "training" been carried to so high a pitch, or been so well ordered, as it was among the Greeks. So far as I know, no attention was paid to dietetic rules by the contestants in either knightly or popular games in the Middle Ages, and "training," in the sense in which it is employed by those who are addicted to British sports, has practically no followers in Germany or Scandinavia, outside the ranks of professional acrobats and a few Anglo-maniacs.

The Greeks used but little apparatus, either in their preparatory exercises, which were made in the palæstræ and gymnasia, or in their match-games, which usually, as at Olympia, took place in the *stadion*, or some other uncovered place; and such apparatus as was used was of the simplest kind. The spear, the discus, possibly the vaulting pole, the *halteres* and *himantes*, which are the prototypes respectively of our dumb-bells and boxing-gloves, pretty nearly exhaust the list of Greek gymnastic machines. The Grecian halteres, somewhat resembling our dumb-bells, were used by jumpers, who carried one in each hand when in the act of leaping. The Romans used *halteres* much as we use dumb-bells, for building up the muscles of the arms.

Machine or apparatus gymnastics are mostly of modern origin. Jahn invented the parallel bars, and the horizontal bar. The stall bar, the swinging ladder and the "Bom" are Swedish devices. Most of the ropes, ladders and poles used in gymnastic climbing have been adapted to modern uses, and cannot be classed, generically, as distinctively Swedish or German. Boucicaut, a famous French mediæval champion, could, we are told, ascend and descend ladders, using his hands alone, while in full armor. The physical training of page and squire, was chiefly directed to making him a good horseman, and to rendering him skilful in the use of sword, lance and maule, while in the saddle: and the newly dubbed knight must be able to leap into the saddle while in full armor. The aspirant to knighthood practised, with his sword, at posts and the Saracen's head; and learned lancemanship by tilting at the ring and the quintain; be-

yond these he had little need for fixed apparatus. The gymnastic horse of wood, so popular everywhere among heavy gymnasts, to-day, is clearly of chivalric origin. I am not able to say when it was first used to supplement or to supersede exercises upon the living animal, but mention is made of it in the sixteenth century. As might be expected, we shall find more "mediæval survivals" in the exercises and tactics of the modern cavalryman than in those of the infantryman.

But the Greek gymnasium was much more than an aggregation of wrestling-pits, running-tracks, exercise-halls, and bathing-establishments, surrounded by colonnades and shady walks. The Athenian gymnasia were clubs and schools as well, provided with lecture-halls and quiet nooks to which the elders of the city resorted for instruction and social intercourse. It is noteworthy that, even among the Greeks, the word *palæstra* came to mean a school, and that the most highly educated of modern peoples, the Germans, designate the highest of their secondary schools by the term *gymnasium*. The French word *Lycée*, derived from Lyceum, the name of the gymnasium in which Socrates and Aristotle taught philosophy, is used in the same sense as the German *gymnasium*. Antisthenes, the founder of the Cynic school of philosophy, taught in the Kynosarges gymnasium. The masters in art and science, the world over, are content to be styled Academicians, in memory of the Academy of Plato, which was one of the public gymnasia of Athens.

The most notable athletic and gymnastic gatherings of our own day are, in a sense, more truly popular than were any of their forerunners; since the masses take part in them, not only as spectators, but as contestants. The great festivals of the German Turners, also, which recur every few years, are peculiarly folk-festivals. They, and the great events of the athletic year in England, — such as the University Boat-Race, the Royal Henley Regatta, the Eton and Harrow, and the County Cricket-Matches, the Lilliebridge Athletic-Sports, and the Foot-Ball Match between the All-Scotland and All-England Elevens, — each and all, excite great interest, and draw immense crowds of spectators. The chivalric tourneys were often signalized by gorgeous pageants, elaborate merry-makings, and stately ceremonials, and were graced by throngs of on-lookers, both gentle and simple. But the sacred games of the Greeks surpass them all as regards significance and splendor.

Olympia, in Elis, where the most famous of the Grecian contests were held for five days every fifth year at the time of the first full moon after the summer solstice, was a festival city. As I pointed out in a former lecture, it not only included a stadion (or race-course), two gymnasia and a hippodrome, but was adorned with temples and other public buildings, with monuments to kings and heroes, with treasure-houses, and with hundred of statues erected to the memory of victors in the games. Here assembled, not only the flower of Greek manhood, but also delegates of empires and cities, and throngs of spectators from distant shores, to witness the athletic contests, the chariot-races, and the competition between poets, dramatists and artists; and to participate in the sacrifices and processions in honor of Zeus to whom the place and festival were sacred. Athletics and gymnastics have never played so large and dignified and prominent a part in the life and affairs of any nation as they did among the Greeks. We may not hope that any modern people will ever reproduce, on a large scale, the essential features of Grecian physical training; for the same reasons that forbid us to look for the rise of a new Sparta or a second Athens.

Grecian physical training was of an empirical nature; for the Greeks, even the best of them, had next to no scientific knowledge of the human body. Plato's physiology is clotted nonsense. Aristotle looked upon the muscles as mere padding for the bones, not suspecting them of being the organs of motion, and held that the chief function of the brain was to cool the heart. But the Greeks were rare empiricists, and saw with wonderful clearness what lay within the range of their unaided vision. Having insight and experience, loving beauty of form, being favored of Heaven as to climate and leisure, their gymnasiarchs and athletic trainers produced types of manly beauty and health which have never been surpassed. The dominant note in the history of the Middle Ages is one of warfare. Education, accordingly, was conceived and carried out with a view to what may be called the technical preparation of the young ecclesiastic or noble for the post of under-officer, either in the cohort of a Lord Spiritual or of a Lord Temporal. Though very much has been done in the last hundred years towards making exact sciences out of the art of war and the art of healing; the art of teaching is still, in the main, characterized by empirical methods, especially among English-speaking peoples. This is particularly true of bodily education.

The mediæval and British types of physical training resemble the Grecian in being natural growths, which smack of their native soil rather than manufactured productions, bearing the tool-marks of their designers and artificers. It is characteristic of modern systems of gymnastics that they have been devised chiefly for remedial or pedagogical ends; and, furthermore, that we have comparatively full and trustworthy accounts of the men and measures whereby their rise and development have been determined.

Enthusiastic worshippers of classical antiquity and writers on education — especially at such times as the Renaissance, the Reformation, and the revolt of the Realists against merely humanistic training in the last quarter of the eighteenth century — have shown a marked tendency to laud and magnify the physical training of the Greeks. Indeed, did time permit, we might readily trace the influence of that training upon some quite recent forms of school gymnastics, since there have been repeated attempts, in Germany, to domesticate the exercises of the Grecian *Pentathlon*, namely, running, leaping, spear-throwing, casting the discus and wrestling. Still the fact remains that no general or very considerable revival of Greek athletics and gymnastics has occurred within five hundred years. Though mailed knights, and the martial exercises which they most affected, have been knocked out, so to speak, by the anathemas of the Church, and other more modern explosives, the code of the soldier and the gentleman is still colored by the traditions of chivalry which favor such bodily accomplishments as riding, hunting, fencing and dancing. The "fagging" of British schoolboys is a survival from the period when the training of the young noblemen in "courtesy" included the performance of many tasks that we hold to be menial. Many of the customs of German university students, especially those which regulate their duelling, are re-

minders of the times when swordmanship formed a necessary part of every gentleman's education. In the sixteenth and seventeenth centuries and late into the eighteenth, a class of special schools, termed *Ritterschulen* or *Adels-Akademien*, were maintained in various parts of Europe, but particularly in Germany, for the education of the sons of the nobility. In such schools instruction in riding, sword-play, dancing and leaping was regularly given; swimming was much practised, and sometimes wrestling.

Although the reformers, Luther, Melancthon and Zwingli, urged the revival of gymnastics as a part of the education of all classes of youth, it was not till the last decades of the last century that any considerable attempt was made to systematize and enforce gymnastic training in Germany. The attempt was made by Basedow, who was a leader in the educational reforms instituted by the so-called Philanthropists, who strove to carry Rousseau's views in education into effect, or, in other words, "to manage it so that the training of the mind and body shall serve to assist each other." The pupils in the Philanthropinum, which Basedow established at Dessau, in 1774, were taught wrestling, running, riding, and dancing, besides carpentry and wood-turning. They were also taught the elements of human anatomy and physiology. The Philanthropists employed both gymnastic and industrial exercises in their efforts to secure the physical training of their pupils. Therein they showed more wisdom than do most of the advocates of manual training among us, who neglect the training of the trunk and limbs for the sake of the hand and fingers. The so-called "Dessau Pentathlon" consisted of running, jumping, climbing, exercises in balancing, and carrying weights. Some of our Young Men's Christian Association authorities have recently promulgated a "Pentathlon," which is a most un-primitive Christian proceeding.

In 1784, Salzmann, who had been one of Basedow's assistants at Dessau, established a Philanthropinum at Schnepfenthal, near Gotha. The three most eminent names in the list of men identified with the revival and upbuilding of German gymnastics are those of Guts Muths, Jahn and Spiess. Each was a teacher and writer. Jahn was an agitator and popular leader in addition. Guts Muths lived from 1759 till 1839, Jahn from 1778 till 1852, and Spiess from 1810 till 1858. Schnepfenthal has been termed "the cradle of German Turning." Guts Muths labored here as teacher from 1785, till his death. Soon after Guts Muths entered Schnepfenthal, in 1785, Salzmann intrusted him with the direction of the five exercises brought from Dessau. "All that I found out from ancient usages," says Guts Muths, "from the historical remains of earlier and later antiquity, all that reflection and sometimes chance offered to me, was brought forward for the sake of amusing experiments. Thus the chief exercises increased. Thus originated, after seven years' experiments, in the first edition of my 'Gymnastics for the Young' (1793), my first attempt to call attention to a subject that had been quite forgotten." His *Gymnastik für die Jugend* was the first German manual of gymnastics. Guts Muths did much to prepare the way for Jahn, the "Father of Turning," and Spiess, the "Founder of German school gymnastics and the creator of gymnastics for girls." Inspired by the example of Guts Muths, many private and a few public teachers introduced gymnastics into their schools. In 1799, Nachtegall, a follower of Guts Muths, established a private gymnastic institute in Copenhagen. The Danes were the first people in Europe formally to adopt the new gymnastics for use in schools and the army. Ling, the founder of Swedish gymnastics, while a student in the University of Copenhagen (1799–1804), had his first lessons in gymnastics from Nachtegall.

Guts Muths, at first, defined *Gymnastik*, a term which was rejected by Jahn but retained by Ling, as "work in the garb of youthful pleasure or merriment." Later he defined gymnastics as "a system of exercises having bodily perfection for their aim." Jahn worked mostly in the spirit of Guts Muth's first definition, Ling in the spirit of the second. It is quite possible, too, that Ling received some impulse towards his laborious studies of the laws of bodily movements from the following utterance of Guts Muths: "I know well enough," says the latter, "that a genuine theory of gymnastics should be based on physiological principles, and that the practice of every single movement should be governed by a consideration of the individual peculiarities of the body." Guts Muths divided "pedagogical physical exercises" into three departments: (1) gymnastic exercises, (2) manual training, and (3) youthful plays. His distinctively gymnastic exercises were: free and pole jumping, short and long-distance running, casting the stone, wrestling, climbing, "balance-movements," lifting and carrying of weights, dancing and marching movements.

That gymnastics, under the name of *Turnen*, became a popular institution and a potent factor in national development, was mainly due to Jahn, a much more aggressive man than the quiet "philanthropist" of Schnepfenthal. Jahn's strong and rugged nature, and restless, passionate spirit, qualified him for popular agitation and leadership in the troublous years between the battle of Jena, in 1806, and the Prussian War of Liberation, in 1813. Jahn seized the idea of making bodily training a force in national regeneration and education, and dreamed and wrote and plotted for a free and united Germany. In 1810, when he was a teacher of boys in one of the city schools of Berlin, Jahn began his career as a gymnasiarch by accompanying a few of his pupils into the woods and fields for the purpose of engaging in youthful sports and exercises on holiday afternoons. His first *Turnplatz* was opened in the *Hasenheide*, a pine forest in the outskirts of Berlin, in 1811. The movement became extraordinarily popular, and young and old flocked to the gymnastic ground. The Jahn Turning was rudely systematized; but slight use was made of "free movements," which were first given a prominent place in German gymnastics by Spiess. The Turners were organized in squads, according to their age and strength. Feats in agility, strength and endurance were performed by Jahn's assistants, called *Foreturners*, and the rest of the squad took turns in "following suit," to use a term common among New England boys. Jahn employed the exercises of Guts Muths, and, with the help of his foreturners, devised many new forms of exercise and apparatus. Prominent among the latter are the horizontal and parallel bars, and certain machines to facilitate exercises in climbing. The Turners were active in the successful uprising against the French in 1813, so that Turning became more than ever popular, throughout Germany in 1814 and 1815. During the political troubles which arose after the War of Inde-

pendence, Jahn and the Turners were denounced as liberals and enemies of the State. In 1819 the turning-grounds throughout Prussia, and in most of the other German States, were closed by the police. Jahn was imprisoned from 1819 till 1825; but he lived to see gymnastics introduced into the Prussian schools, by order of the King, in 1842; and before his death, in 1852, Turners' societies were once more in a flourishing condition throughout Germany.

At the present day German gymnastics include the popular gymnastics of the *Turnvereine*, school gymnastics, and military gymnastics, the latter being a modified form of school gymnastics. School gymnastics include free movements, light gymnastics, or exercises with light apparatus such as wands, dumbbells, and clubs, and *Gerätübungen*, or exercises on the more difficult gymnastic machines. Spiess introduced "class" and "order" gymnastics, thereby making it possible for the ordinary teacher of a school class to teach gymnastics to all his pupils, in the same way that other branches of study are taught. In the army and in the schools, exercises of all sorts are executed by the class or division at the word of command. In the *Turnvereine*, free and class gymnastics are also conducted in the manner alluded to above; though in heavy gymnastics the foreturner feature is retained. Both Germans and Swedes have outgrown the childish practice, so common in America and England, of teaching gymnastics by means of memorized and musical drills. Indeed, I doubt if German or Swedish teaching was ever hampered by such inept and ineffectual methods. Special normal schools for the training of teachers in gymnastics exist in most of the German States; and a large proportion of the elementary and secondary schools are provided either with a well-equipped gymnasium, *Turnhalle*, or else a *Turnplatz* out of doors. Many schools have both. In many of the larger and higher schools, special teachers of turning are installed; while in the elementary schools, for the most part, gymnastics are taught by the class-teachers. But usage in this regard is not uniform.

School and military gymnastics have grown to a large extent out of popular gymnastics, or *Volksturnen*, which still retains its place as the most distinctive branch of German physical training. The union of the German turning societies is known as the *Deutsche Turnerschaft*, an organization of some thirty years' standing. On January 1, 1891, out of 4,763 turnvereine in Germany and Austria-Hungary, 4,252, in 3,603 localities belonged to the Turnerschaft, whose total membership numbered 421,000 men and boys over fourteen years. Of the total membership (which amounts to 1.6 per cent. in a population of more than twenty-five millions), more than one-half are classed as "active turners" and ten per cent. as skilled gymnasts or "foreturners." In 1880, the Turnerschaft numbered 170,315 members of whom 86,159 were active turners. It is almost as usual to find turnvereine among Germans in foreign lands, as to find cricket and foot-ball clubs among British colonists. Turning societies flourish in the United States, Brazil, China and Australia, as well as in all European countries. In the United States, the principal association of the turners is the North American Turnerbund, which has a membership of over 35,000. It may be noted in passing that the Turnerbund, which dates from the revolution year of 1848–49, is much more highly organized for social and political purposes than the German turners ever were; that it has been influential in securing the introduction of physical training into the public schools of Kansas City, Cleveland and Chicago; and that it maintains a larger number of gymnasia, and a fuller and more competent corps of teachers of gymnastics than do all our colleges put together.

Having spoken at length, in a previous lecture of Ling and his work, I shall confine myself, in this connection, to a rather summary treatment of the Swedish system of educational gymnastics, foregoing all consideration of the Swedish *Sjukgymnastik*, or movement treatment. The Swedish *Friskgymnastik* differs so widely as to its origin, aims and methods from the German *Volksturnen*, that the two are rather to be contrasted than compared. Popular gymnastics have never occupied the foreground in Sweden, and have assumed extremely little prominence, even in the background, till within rather recent years. In Norway, popular gymnastics are only semi-Swedish. In comparing Swedish and German school gymnastics, the distinction between an artisan's kit of tools and an instrument of scientific precision suggests itself. Swedish gymnastics owe their distinctive features of simplicity of form, compactness and balance of parts, finish and precision of method, to Ling and his successors at the Royal Central Gymnastic Institute in Stockholm, which has been maintained by the Crown as a normal school, for the education of civilian and military teachers of gymnastics since it was opened, at Ling's instance, in 1814. Ling's principal writings are poetical; but he had more of the patient, critical, scientific spirit than Jahn, and did his best to discover the physiological and pedagogical laws which should underlie every rational scheme for the bodily training of children and youth. His natural impulses, and the exigencies of his position as an official teacher of teachers and of military cadets, combined in leading Ling to adopt simple, direct and orderly measures. He made use of both free and class exercises before Spiess introduced them into German gymnastics. Apparatus gymnastics, though regularly employed by the Swedes, are given less prominence than is accorded them by the Germans. Certain gymnastic machines which are favorites with the Swedes are not used in Germany, and *vice versa*. Gymnastic games and fencing are employed both by Swedish and German teachers of school gymnastics. Much less care and attention have been given in Germany than in Sweden to physiological considerations, in the selection and arrangement of gymnastic movements; therefore the Swedes reject many forms of exercise as useless or injurious which pass muster in Germany. For example, the Swedes discard exercises that tend to constrict the chest, those that require the breath to be held, and those producing continued pressure on the larger vascular or nerve trunks. One of their most stringent rules is, that all movements should help and not hinder full, free and regular breathing. Swedish gymnastics surpass all other forms of pedagogical gymnastics, in the care taken, not only in co-ordinating the exercises belonging to a single "day's-order" with regard to each other, but also with regard to the "day's-orders" which have been practised, and the "day's-orders" that shall follow. By means of the "day's-order" or "table" and the principle of "gymnastic progression," which they alone have worked out and adopted, the Swedes are enabled to order and vary their school gymnastics, from day to day, from month to month, and from year to year,

in a graded series. By this means continuity is secured in the instruction; and the pupils, of whatever age or condition of health, are advanced from simple, easy, and absolutely safe exercises, to those that are complicated, difficult, or comparatively dangerous. Class-leaders and memorized drills have no place in instruction of this kind. All exercises, whether by a full class or by a squad, are executed at the word of command. Continuous, progressive, and comprehensive gymnastic training cannot be secured by mere imitation of a leader, or by executing memorized exercises over and over again. Change and variety are necessary, and must be had. They are best secured in school gymnastics, by recognizing the laws of physiology and by following the principles of sound teaching.

Compared with teachers of gymnastics in any other country, those of Sweden are a small and highly trained corps. From its inception, the majority of the pupils of the Central Institute have been young officers in the army and navy, so that teachers of gymnastics in Sweden hold a better social position than elsewhere. Under special circumstances one may, by passing the required examinations, be licensed to teach without taking the course at the Central Institute, a course be it said, more extended, comprehensive and severe than is the case in any other European normal or military gymnastic school. The influence and traditions of the Central Institute are paramount in all branches of Swedish gymnastics, and have made them what they are.

Hitherto, school gymnastics in Switzerland, Austria, Belgium, Denmark, Russia, Italy, England, and even in France have followed or resembled German school gymnastics in the main; but in France, Denmark, England and Russia a tendency to adopt or approximate towards Swedish methods has declared itself, recently. In my opinion, the Swedish systems are better adapted to the needs of school children, between the ages of seven and fifteen, than any other. For boys above fifteen and collegians — at any rate in England and America — I am inclined to think an admixture of German forms of exercise will be found advantageous; but I would have them grounded in Swedish gymnastics to begin with.

Speaking broadly, the muscular and nervous tissues, well termed the "master tissues," constitute the executive or working mechanism of the body; and the chief function of all the other tissues of the body is to serve either as their purveyors or scavengers. The structural integrity and functional power of the purveyor and scavenger tissues are indirectly promoted by muscular activity; but the most important effects of muscular exercise are, (1) the attainment or maintenance of normal size and strength by the master tissues, and (2) the acquirement of correct and economical habits of neuro-muscular action. The ends of physical training, then, are hygienic on the one hand and educational on the other. No comprehensive system of physical training can be considered safe or rational in which these ends are not clearly recognized and intelligently provided for — through the adaptation of its exercises to the varied and varying wants and requirements of the individuals to be trained, in respect to their sex, age, strength, mental capacity and calling in life. The results which should be secured by such a system are briefly these: Erect and graceful carriage of the head and trunk; a broad, deep, and capacious chest in which the heart and lungs, developed to their normal size and strength, shall have free, full and regular play; square shoulders; a straight back; fully-developed and well-rounded limbs and the power to execute with ease, precision, and economy of force, such movements as are involved in the simpler exercises of strength, speed and skill, and in ordinary gymnastic and athletic feats.

In general, we may say that the Grecian gymnastics and athletics, and the martial exercises of the ancient and mediæval Gauls and Teutons were of a character to affect chiefly the fundamental or earliest developed neuro-muscular mechanisms,[2] which constitute "the coarse adjustment" of the body. The more massive bodily virtues of strength, endurance and speed are promoted by popular sports; whereas dexterity, address, sleight-of-hand, quickness and accuracy of eye and hand require more specialized and complicated forms of exercise for their development. In other words, British sports are insufficient for the purpose of giving a complete training to the fundamental and accessory groups of muscles, and require to be supplemented by such drill as is afforded by the systematic gymnastics of the Swedes and Germans. For purely educational ends no system of physical training has yet been devised which is equal to the Swedish school gymnastics. American physical training will remain a thing of shreds and patches, unless the promoters and governors of our educational institutions shall set themselves to learn to apply the teachings of science and experience with regard to the nature, scope and results of physical education.

Original Articles.

CONTRIBUTIONS TO THE STUDY OF CHOREA, WITH SPECIAL REFERENCE TO ITS CONNECTION WITH HEART DISEASE AND RHEUMATISM.[1]

BY DR. S. G. WEBBER.

I have been very much interested in this subject. I cannot, however, undertake to add anything to the general review of the subject. I have not had time to look over the cases of chorea which I have seen, but my impression is that heart disease and rheumatism have appeared less frequently in my experience than in that of some others. I think it has been comparatively rare for me to find that cases of chorea have had clearly defined attacks of articular rheumatism. Two very interesting and rare cases have come under my observation, in which the chorea seemed to supplant the rheumatism. In both cases the child had an attack of acute articular rheumatism. After a short time the choreic symptoms appeared. The rheumatic affection then diminished in severity. I think the joints were less swollen. The chorea in both cases was very severe. It was necessary to put sides to the beds to prevent the patients from throwing themselves out of bed. The attack was of moderate duration, and in both cases as the chorea passed off,

[1] Presented at the regular meeting of the Boston Society for Medical Improvement, Monday, November 2, 1891.

[2] For a fuller discussion of the effects of exercise on the nervous system see "On the Physiology of Exercise," this JOURNAL, March 31 and April 7, 1887; and "General Exercise," Hare's "System of Practical Therapeutics, vol. I, 1891, by the writer.

the rheumatism reappeared, and the joints again became swollen. The cases were very singular. Both of them had heart disease. It is only a few months since I heard from one of those cases and the heart affection still persists. It was, I suppose, organic in both cases. In one I know it was. I think the rheumatism acts simply as a predisposing cause, like any other influences which lower the child's power of resistance.

I had at the City Hospital a very peculiar case. There were no choreic movements in the child, but the heart was irregular. I put the child on arsenical treatment as if it had chorea, and the heart became steadied and the affection entirely disappeared. It seemed to me as though it was an attack of chorea without general muscular disturbance, but simply with heart affection. That is the only case of the kind I have seen.

BY DR. F. C. SHATTUCK.

The English views on the subject of the relation of chorea to rheumatism and heart disease are well known. The English statistics vary very widely, anywhere from twenty per cent. to over fifty per cent. of cases with such association, and as far as I know, the subject has received more attention from that nation than from others. Fagge says that Dr. Bright taught years ago that these affections are related. He also says:[2] "Of 163 cases compiled by Mr. Halstead (unpublished), 53 had had rheumatic-fever or distinct pains in the limbs, believed to be rheumatic, and in 35 of them the rheumatism preceded the chorea by less than six months." The Guy's Hospital cases have been very carefully collected, and I think we should attach great value to the statements of such men as Fagge and Pye-Smith, who doubtless exercised much care in determining whether there was or was not a history of rheumatism. The causes for wide variation are not far to seek. Has rheumatism been present or not? Is endocarditis or its legacy present in a given case? These are two points as to which observers may very well differ. In rheumatism we have cases with transitory murmurs, which are attributed to endocarditis because of this association. If there were not rheumatism we should often class these murmurs as dynamic. That there are cases of endocarditis in which there is no murmur, is a fact of which we have *post mortem* evidence. So that the presence or absence of an endocarditis is not always an easy matter to determine, even by the most skilled observers.

It seems to me very important that this matter should be brought up as to the relation, if there be one, of these affections; and it is of comparatively recent years, I think, in this community, that much importance has been attached to the endocardial murmurs in connection with chorea. Certainly I was taught as a student that such murmurs are nearly always functional in character. That is probably a practical error, and one of importance with regard to treatment.

Dr. Osler studied this question in connection with the chorea cases which came to the Philadelphia Orthopædic Institution some years ago, and his conclusion was that any murmur in a case of chorea should be treated exactly as if it were indicative of an endocarditis.

The difficulties of the subject are very great. In the first place, we do not know what rheumatism is. In the second place, we do not know what chorea is, so that to establish what is the exact connection between the two is not an easy matter; but the number of cases in which there is an association is altogether too large to be simply a matter of chance. It seems to me that much importance is to be attached to one point, namely, that in almost every fatal case of chorea, vegetations are found upon the cardiac valves. The patients don't die from the endocarditis. They die from the chorea, or from some intercurrent disease, but the valves are found diseased. Of eighteen fatal cases in Guy's Hospital, in seventeen the valves were diseased. I would not state positively, but it is my impression that in some of these fatal cases in Guy's Hospital the apparent exciting cause of the chorea was a fright. How fright is to set going an endocarditis is not an easy matter to understand; but there is the fact, the valves were found diseased. As I listened, some years ago, to Dr. Cheney's paper on the cure of some cases of chorea, or of choreiform movements, by the correction of refractive errors, the question came into my mind, may not chorea be a symptom rather than a disease?

Again, it seems to me that the paper of Dr. Morris Lewis, published some three or four years ago, is of interest in this connection. Dr. Lewis, I think enlarging some investigations of Dr. Weir Mitchell, studied very carefully the time of onset of a large number of cases of chorea, taking them from the records of the Orthopædic Hospital in Philadelphia, and he states that far the largest number of cases originate in March. Then he studied in the Pennsylvania Hospital the records of a large number of cases of rheumatism, and he found that decidedly the largest number of those cases occurred in April. He also studied the meteorological records and found that the chorea curve was almost exactly parallel with the storm-centre curve, that is, the storm-centre within four hundred miles of Philadelphia, so that while chorea came at the time of the storms as it were, rheumatism came a month later.

BY DR. MORTON PRINCE.

The great difficulty with statistics in regard to previous attacks of rheumatism in cases of chorea, is the laxity with which the evidence in favor of previous attacks of rheumatism has been collected. It has varied from an insignificant amount, say six per cent., by Hermann, up to 85 per cent., by Hughes and Burton Brown. Of course, this great difference must depend very largely upon the personal factor. But besides the mere occurrence of a previous attack of rheumatism, there is another factor which, it seems, must be taken into consideration in determining the existence of a causative relationship, and that is the time that has elapsed since the attack of rheumatism, and previous to the outbreak of chorea. So far as I have been able to look into the subject, very few of those who have given statistics have stated the length of time that has elapsed. It is perfectly evident that the value of any collection of cases must depend largely upon this factor. If, for example, in a case of chorea following rheumatism, an interval of six months had intervened between the attacks of the two diseases, that case would be of less value as evidence in favor of the rheumatic origin of chorea than one in which the chorea had occurred coincidentally with, or had followed within a few days,

[2] Fagge Practice, 2d ed., vol. i, p. 753.

the rheumatism. Most statistics do not give any information on this important point. Therefore the value of most statistics, to my mind, is greatly weakened by the failure to note the time interval. More important are the cases, of which there are quite a number on record, in which the chorea has coincided with or followed immediately upon the rheumatism.

Thus Herringham has reported a series of cases, eighty in number, in which he found a previous history of rheumatism in twenty-one. In six of these there was an immediate connection, that is, in two the chorea developed coincidently with the rheumatism, and in four it followed immediately after. It seems to me that such cases offer a very strong argument in favor of a casual relationship between rheumatism and chorea. Although the number of cases of this sort is small in proportion to the cases where the time interval has been long, still the number is absolutely quite large, and is of much greater value as evidence than a very much larger number of cases of the other kind.

But granting the relationship, as I personally do, one of the most important questions is, what is its nature? This is the most difficult question of all to answer. It seems to me that to understand it at all we must take a broader view of the question, and consider all the conditions under which chorea has been found to occur, and if we shall do this we shall find that all the evidence points to the conclusion that chorea must be looked upon as a symptom-complex, as a group of symptoms dependent upon a condition of the cerebro-spinal system, which anatomically is not known yet, but which may be produced by a very large number of different pathological conditions. In this respect it may be likened to convulsions. A convulsion is a complex group of symptoms which may be due to focal lesions in the brain, or to more diffuse cerebral disease. It may be due to poisoning from lead, or to "blood poisoning," as in uræmia; it may be due to reflex irritation, as from wounds and intestinal diseases of children; it may be due to the poison of contagious diseases, as in scarlet fever; or it may be due to unknown changes in the brain, as in idiopathic epilepsy; and so with chorea. Chorea has been found to exist under a great many different conditions. It occurs in the course of rheumatism and in the course of heart disease. It is known to occur frequently after fright, in fact, Hermann, who places the number of cases in which rheumatism has existed as low as six per cent., claims to have found fright in forty-two per cent. of the cases. It has been known to occur in iodoform poisoning, as in a case reported by Demicre. Errors of refraction seem to be an exciting cause in some cases; for Colburn found refractive errors in 39 out of 54 cases. There was no return of the symptoms in any of these cases after correction of the errors, and the patient had become accustomed to the new conditions. Circumcision of an adherent prepuce cured the symptoms in a case reported by Leonard, and Jacobi reports a case cured by operation for the relief of nasal irritation. Like convulsions, chorea has also been observed in the course of infectious diseases; and Handfield Jones and others have met with it as a result of pregnancy. There is also a well-known type known as hereditary or Huntington's chorea, which, although having a different course and clinical history from the ordinary form, yet resembles it closely in the motor symptoms. Other cases seem to be entirely without ostensible cause, or to be idiopathic. Thus the conditions under which chorea occurs, show a very remarkable parallelism with those under which convulsions are met with.

Looked at from this broad point of view, the facts, as a whole, would seem to require that chorea should be regarded as a group of symptoms which may be due to a large number of causes, of which one is rheumatism; and, it seems to me, that the connection between the two is to be found in the poisoning of the system or impairment of nutrition, rather than in an embolic process. I am rather sceptical regarding the embolic nature of chorea, because I think the clinical and pathological evidence points to the fact that the spinal cord in a certain number of cases is affected as well as the brain. We must remember that in chorea one of the symptoms which is not very infrequently met with is paralysis, and amongst the paralyses, paraplegia has been observed. Now it is very hard to believe that, when paraplegia occurs, it is due to cerebral and not to spinal disease. In fact, the autopsies have shown in some cases the presence of hyperæmia and minute hæmorrhages into the spinal cord as well as into the brain; and therefore, as a direct factor, I cannot myself accept the notion that cerebral embolism plays a very important part. In the autopsies I think the most frequent changes have been found to be not embolism, but hyperæmia and extravasation of blood and changes in the cells.

BY DR. W. N. BULLARD.

I have now for many years kept careful records of cases of chorea, with special reference to troubles of the heart in connection with this disease. These cases have been almost all very carefully examined by myself, and the results may be considered those of personal observation. Before coming here, I looked over one hundred of these cases, and I will state the results.

The first point which I noted was the presence of rheumatism in the parents — practically all my cases were children; but of one hundred cases in which this fact was noted, one or both of the parents had had rheumatism in 28 cases; in three additional cases it was doubtful, but had probably existed. Only those persons are counted as having had rheumatism in whom decided symptoms existed. In four cases it was found not in the parents but in the grandparents.

Of the patients themselves, out of 100 cases, 17 had articular rheumatism, and four rheumatic fever (21 severe cases); nine had pains and more or less doubtful symptoms; while the rest (70) were recorded as having never had rheumatism. In several of these cases the rheumatism immediately preceded the chorea.

The heart was carefully examined, and I tried in all cases to distinguish as far as was possible between organic disease and functional disease. I found that there was probably severe valvular lesion or endocarditis in 27 cases, and slight cardiac trouble in 16 cases. There was marked cardiac irregularity in eight cases, of which four had valvular trouble and were counted among the lesions; the other four were not counted. Adding them to the slight affections (though some of these were probably due to valvular trouble), we have 47 cases in which the heart was not absolutely normal, in 27 of which, at least, we had to deal with organic lesions, and probably in many of the other cases there was some slight organic difficulty.

A systolic souffle, heard all over the cardiac area, probably due to organic disease, was found in 10 cases; a systolic souffle, limited to the apex, occurred in 12; a systolic souffle over the aorta, evidently organic, occurred in one; and in 10 there was a systolic souffle loudest at the base and possibly anæmic. There were two cases of aortic disease, one of acute endocarditis occurring with the chorea while under observation.

Is the cardiac affection apt to occur previous to or with the first attack of chorea? Or do we find it more frequently occurring for the first time when the patient returns with another attack? Out of the 27 cases of severe heart trouble, 15 had chorea for the first time; in six cases it was found during the second attack (these patients were not seen during the first); in three cases we have no record of the number of the attacks; and in three it was found in attacks later than the second. In two cases it was recorded as not present in the early attacks, while it was found the time of a later attack.

In eight cases the patients had had rheumatism severely previous to the time seen, and in five others slightly; in two cases there was no record upon this point; in 12 no rheumatism had been noticed.

The date of the precedence of the rheumatism or its time in relation to the choreic attacks seems to me a matter of small importance. There are many cases in which acute articular rheumatism or endocarditis precedes chorea, sometimes by a long and sometimes by a short period, and many others in which these affections are found coinciding with or following a choreic attack. A person who has once had an attack of acute articular rheumatism or rheumatic fever, is liable to rheumatic manifestations at almost any time, when predisposing causes exist. Therefore, in discussing the evidence as to the existence of a connection between chorea and rheumatism, it does not seem to me to be necessary to show a direct time connection between the two. As a matter of fact, in many of my cases the rheumatic symptoms did immediately precede or coincide with the chorea.

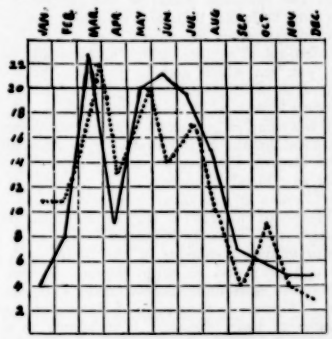
Chorea seems to me to be simply a symptomatic trouble in the sense in which this term has just been defined. It is due to a hyperirritability or irritability of certain portions of the central nervous system. It may be produced by a variety of causes. It is specially liable to occur in the children of neurotic parents, and in those who have a congenital neurotic constitution. In a certain number of my cases more than one child in the family had chorea; in many the parents have neurotic troubles. Again, a large proportion of the cases of chorea occur in children who are extremely anæmic, whether the anæmia be due to rheumatism or to other causes.

Two of the principal predisposing causes of chorea are a *neurotic* disposition and *anæmia*. I have no question that rheumatism is connected with chorea.

BY DR. PHILIP COOMBS KNAPP.

Some time ago I tabulated the cases of chorea which had come under my observation, with the intention of reporting the results of such a tabulation. I have since revised the tables, and brought them up to date. I had noted the relation of chorea to the time of year, and I will ask permission to report briefly my results. In five years from May 1, 1885, to May 1, 1890, 142 new cases of chorea, out of a total of 2,398 new cases, presented themselves at the nervous out-patient department of the Boston City Hospital. I have arranged them by months as follows:

Months.	1885-86	1886-87	1887-88	1888-89	1889-90	Total.
May	8		4	1	3	20
June	4		1	4	7	21
July	5		3	1	5	19
August	3	6	0	2	4	15
September	3	1	0	0	3	7
October	0	1	0	2	3	6
November	2	1	0	1	1	5
December	2	1	1	1	0	5
January	3	0	0	1	0	4
February	4	2	2	0	0	8
March	5	6	6	3	3	23
April	1	0	2	3	3	9
	40	32	19	19	32	142
Total cases	421	483	461	495	538	2398



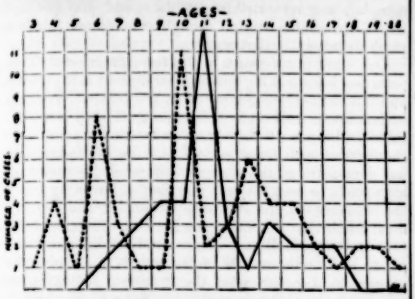
Solid, cases presenting themselves at hospital during month (142). Dotted, cases beginning in month (138).

Of these 142 cases, I was able to determine the date of onset in 138, but, of course, not with absolute accuracy. The result was as follows:

January	11	August	10
February	11	September	4
March	22	October	9
April	13	November	4
May	20	December	3
June	14		138
July	17		

These results agree tolerably with Weir Mitchell's. It will be seen that in March, May, June, July and August. the number of cases presenting themselves at the hospital was above the average; in March, April, May, June and July the number of attacks was above the average. In both cases there is a curious decline in the month of April. One case reported an attack every spring from the age of five to the age of sixteen, then an attack in the spring at the age of nineteen. The cases of chorea have grown less, in spite of an

increase in the whole number of patients, until the year 1889–90, when there was an increase. Some cases have certainly followed the epidemic of influenza; perhaps that explains the increase.



Solid line, boys. Dotted line, girls.

My statistics were originally based on 80 consecutive cases seen by me in out-patient service. I have taken only the cases that came to me as new patients, omitting all cases of relapse, which had originally been under the care of my colleagues, and all cases handed down by them. I have since added 15 other cases, which, oddly enough, materially alter my percentages. Cases of chronic chorea of adults, and chorea due to gross brain lesions are, of course, excluded. There were 39 boys and 56 girls. Sixty-nine came first during the first attack, 18 during the second, four during the third, two during the fourth, one during the fifth, and one during the twelfth. The ages were as follows:

Age.	*Girls.*	*Boys.*	*Total.*
3	1	0	1
4	3	0	3
5	1	0	1
6	8	1	9
7	3	2	5
8	1	3	4
9	1	4	5
10	11	4	15
11	2	12	16
12	3	3	6
13	6	1	7
14	4	3	7
15	4	2	6
16	2	2	4
17	1	2	3
18	2	0	2
19	2	0	2
26	1	0	1
	56	39	95

The influence of puberty is certainly not apparent.

Like every physician who has seen much of chorea, I have occasionally met with cases associated with acute articular rheumatism and endocarditis which harmonize with the English views, but I have doubted the traditional relation, and I have certainly failed to note it in the majority of my cases.

Rheumatism is certainly a vague term and its use often recalls the German couplet:

"Was man nicht diagnosen kann
Das heisst man als rheumatisch an."

If there be any relation it must be with acute articular rheumatism, not with vague pains of unknown causation often called rheumatic. My observations show that the relation is distinctly less frequent than in some other series of collected cases. In eight cases there had been acute articular rheumatism, in five of which the rheumatism and chorea were closely connected in point of time. Four of these cases of rheumatism occurred in the last 15 cases. Five of the eight cases came during the first attack of chorea, two during the second, and one during the twelfth. In 25 other cases there were pains, which were variously described as follows:

"Rheumatism"	1
Swelled ankle, not painful	1
Pain in knees, coming on with attack	2
Pain in knees	2
Pain in feet before attack	1
Pain in joints	2
Pain in back and legs	1
Aching in legs	1
"Growing pains"	2
Pain in hips toward end of attack	1
Pain in bones	1
Pain in muscles	1
Backache	1
Pain preceding attack	1
Pain during attack	1
Pains	4
	25

Such pains are too vague in character to be of importance, and they have no relation to acute articular rheumatism. In the majority of cases the patients made no complaint of them, and their existence was brought out only by questioning.

In 32 cases the patients had had scarlet fever, and in two cases chorea followed scarlet fever immediately. In three cases chorea followed influenza.

Such figures, showing acute articular rheumatism in less than ten per cent. of the cases, furnish a strong argument against the old theory that rheumatism was the cause of chorea. Nevertheless, rheumatism seems commoner in patients with chorea than with other patients. The statistics are uncertain, but I have collected from the reports of the Children's Hospital from 1885 to 1890 inclusive, some figures. Out of 2,095 cases admitted to the hospital in six years, 23 were admitted for rheumatism, 37 for chorea. In the three years, 1888, 1889, and 1890, out of 4,430 out-patients, 16 had acute or sub-acute rheumatism, 84 chorea. The percentage of rheumatism is much below that seen in my cases of chorea, less than a half of one per cent., instead of eight per cent.

The cardiac disturbances in chorea are of various sorts; endocarditis is, of course, the most important. In 16 cases cardiac irregularity was noted; in five of these cases the irregularity was associated with a cardiac murmur; in another case it was clearly due to the excessive use of tobacco. The figures are doubtless too low, as I probably failed to note it in a few cases. In six cases the cardiac sounds were rough, booming or tumultuous. In three cases an anæmic murmur was noted in the neck; it may have existed in other cases. In 20 cases there were endocardial murmurs, as follows:

Systolic apex	12
Systolic at base	2
Double at apex	2
Systolic apex, with enlargement	1
Systolic base, with enlargement	1
Double base, with enlargement	2
	20

In five of these cases there was acute articular rheumatism, in five others various pains. Of the four cases

with enlargement only one had had rheumatism, another had had pains. Fourteen came during the first attack, three during the second, two during the third, and one during the twelfth. A heart murmur, however, is not necessarily an indication of endocarditis, or even of valvular disease.

Such is the result of my observations on chorea. It is probable that acute articular rheumatism and perhaps endocarditis, are commoner in choreic patients than in patients with other affections, yet three-fourths of the cases of chorea have neither rheumatism nor endocarditis. It is unwarrantable, therefore, to ascribe to acute articular rheumatism the chief causal influence on chorea. Other factors, the neuropathic taint and overwork in schools, are of some importance. It may be that chorea is an acute infectious disease. It is probable, moreover, that what is now regarded as one affection, the chorea of Sydenham, may eventually be divided into several distinct diseases, and arising from various causes: overwork, fright, irritation, infection? rheumatism, or debility. Scarlet fever is certainly much commoner as an antecedent than acute rheumatism.

BY DR. J. J. PUTNAM.

I think the study of the relationship of different diseases is a very fascinating one, and that we should not be deterred by the apparent want of resemblance from seeking real kinship between them. I agree with those who hold to the relationship of chorea to many other conditions, but inasmuch as the relationship between chorea and rheumatism is closer than that between chorea and most other forms of disease, we are likely to learn more by studying it.

There is one class of cases not always enough alluded to, and that is those cases in which chorea precedes rheumatism. In the co-operative investigation of the English physicians that was found to occur in two per cent. (as cited by Sturge). I have seen one or two cases of that sort. In one case (a neurotic child of neurotic parentage) chorea came on when the patient was quite a young boy, and at that time he had a murmur which I believed to be functional. The murmur was diastolic and was heard on the left side of the sternum. He had had no rheumatism whatever. Within the last year, he being now about twenty years old, he had quite a sharp attack of rheumatism, and this murmur was found to be increased. The heart is much enlarged and he suffers from various symptoms of cardiac trouble.

Dr. Osler induced his cases of chorea to come back, and he examined quite a large number of them, and found in a large proportion of them murmurs which had not been noticed at the time of the first examination, but had developed later.

A few words as to the relation of chorea to the weather, I find in looking over the Massachusetts Hospital records for the years covered by Dr. Lewis's report, that the number of cases beginning in the summer was very small, while there was a comparatively large number beginning in October and the largest of all in March. Dr. Lewis's corresponding months were September and April I believe. The cases beginning in October could hardly be attributed to the debilitating effects of school-life, and in general I doubt whether debility by itself leads to chorea.

The relation of rheumatism to other forms of nervous disease ought to be alluded to because it is very marked, especially if we take the more chronic forms of rheumatism and especially the rheumatic arthritis of the finger-joints.

The pains in the limbs of which choreic children complain are very striking at times and may perhaps be of rheumatic origin, though we cannot tabulate them definitely in that way.

One word in reference to the term *functional*. That term has been making mischief for a great many years, and the sooner we get rid of it the better. We talk of functional and organic diseases as if they were different, whereas we now know they are the same. In the light of such investigations as those of Hodge, who has demonstrated the changes in form and contents of nerve-cells in bees between morning and evening under the influence of the ordinary fatigue of the day, we must admit that the difference between functional disease and organic disease is not a radical difference and not to look on the matter in this way is to abandon the attempt to discover what the structural change in so-called functional change really is. Some of the changes in chorea are very important. One of the most interesting investigations is that of Dr. C. L. Dana, of New York, who has demonstrated widespread and well-marked alteration in the ganglion cells in various parts of the brain. I have been for some time in the habit of teaching that disorders in the nervous system may arise in two principal ways; one by impairment of nutrition of the nerve elements, and the other by the failure of the proper harmony of action between different parts of the nervous system. Fright has been spoken of as causing chorea, and it certainly causes structural diseases of the spinal cord and brain.

BY DR. T. M. ROTCH.

Possibly the Society may like to hear the conclusions which I have come to from a careful study of chorea clinically, during the past twelve years. The disease is one which, to such a great extent, may be said to occur during the middle period of childhood, that we can best study it in its purity among children.

About ten years ago I wrote a lecture on chorea for my students, and, on looking over what I then wrote, it seems to me that but little additional knowledge has since been given to us concerning the etiology and pathology of the disease. We have a certain group of nervous symptoms which we designate as a disease: chorea. In a limited number of cases autopsies have revealed pathological lesions of, perhaps, the brain or heart; but in a vast number of cases we are pretty sure that these lesions do not exist. We should, therefore, recognize that certain pathological lesions may give rise to choreiform symptoms, but that, entirely outside of these gross lesions, there may be such a disturbance of the vitality of the nervous centres, as to cause these same symptoms, which represent the disease chorea, and which alone we shall designate as chorea. The relation existing between cardiac disease and chorea is an interesting one, but we should, to fully understand it, recognize that cardiac disease in young children, especially at the time when chorea is most apt to occur, is a disease essentially of inanition, and, from its producing a lack of proper blood-supply to the nerve centres, strikes directly at their vitality. Any disease of an exhausting type may produce chorea in children, where such a condition of inanition of the nervous centres would

not occur in adult life, and the great preponderance of cases of chorea in children, in comparison with adults, is very significant and valuable in eliminating gross pathological cardiac lesions, so common in adults, as a cause of the disease.

Dr. Morris Lewis's figures have also been used to prove that chorea is rather a disease of inanition, and I think the matter of dispute is that class of cases — not the class of cases of organic disease which have been known for years — but the class of cases that have not generally been explained. As the children begin to go to school they begin to have attacks of chorea, and these attacks culminate in March and April. We have cases of chorea caused by lumbricoid worms. Then it is simply a result. They are choreiform symptoms following a cause.

As to the severity of the disease, we have very severe cases brought to the Children's Hospital, and I should say as a rule, we do not lose them. When the children die it is almost always found that they have some definite organic disease causing the death, and not the chorea, and some of our worst cases have recovered and have shown no signs of organic disease from the beginning to the end of the attack.

BY DR. E. M. BUCKINGHAM.

I have tried for a number of years to investigate the true relation of the heart to chorea, and to separate the functional cases from the organic. Although I have not arranged my figures, I think they would give a comparatively small proportion of disease of the heart. I feel quite sure that one half of my cases did not have any heart symptoms whatsoever. Of those that did, by far the greater number got over all heart symptoms as they got over chorea, and I should not be willing in the case of chorea, to make the diagnosis of valvular disease of the heart unless I had a very clear case, because you get anæmic cases in which there is a systolic murmur, the second pulmonic accentuated, the circulation poor, and they get entirely over every symptom. I question if you may not have a valve occasionally and temporarily forced by the violent irregular motions in a weak heart. The matter of fright, also, needs to be analyzed fully as carefully as disease of the heart. It is easy to get a history of fright if it is asked for, but in most cases this history does not bear investigation. Fright may, however, be a cause. I recall a case in which a child saw her grandmother fall downstairs and die from broken neck. This child came to the hospital the next day with very severe chorea, which she did not have before.

BY DR. J. A. JEFFRIES.

I have gone over my notes of seventy-three cases of chorea, all seen during the last three years. Of these, fifty-one were girls, and twenty-two boys. The ages most affected, dating from the first attack, are the ninth and twelfth years. In only four cases could I get anything like a history of rheumatism, as follows:

Girl, ten years old. Mitral systolic murmur; had much pain in elbow, but no objective symptoms.

Girl, nine years old. Heart negative; had pain, redness and swelling in knees during the onset of the chorea.

Boy, four years old. Mitral systolic murmur; had much pain in joints, no objective symptoms.

Girl, fifteen years old. Heart normal; had pain, redness and swelling at right knee some months before the chorea.

Of course, a few others said they had had rheumatism when asked, but they were unable to say what it was like. As to heart trouble, eleven have had distinct murmurs, loudest over the apex, systolic in time, which were persistent. In many of these cases the sound was transmitted round the side and the heart and liver were enlarged. One case had a distinct murmur, loudest over the aortic valve, systolic in time. In all, twelve cases of organic heart trouble, that is, one in six. In eleven of the cases the heart trouble was found at the first visit, and in several must have antedated the chorea. In the other, the heart trouble developed after the chorea had existed for three years, the chorea itself in this case dating from recovery of consciousness after a stunning blow on the head. Besides the above I have had a few cases with transitory murmurs — in all probability functional in nature. So far there has been but one death, this from acute endocarditis. But in several instances other children of the family have died of chorea with heart trouble. Not rarely the father had had chorea, but in none of my cases the mother.

BY DR. C. W. TOWNSEND.

I am analyzing the cases of chorea and rheumatism at the out-patient department of the Boston Children's Hospital. The results from one hundred and forty-eight cases show a connection between chorea and rheumatism. I was surprised at the large number of cases of rheumatism, and was also interested to find that in some cases, put down at first as having a murmur, possibly a transitory murmur with no enlargement of the heart or any symptoms of organic disease of the heart except the existence of a murmur, undoubted organic disease of the heart has since developed.

As to the existence of fright as a cause of chorea and the coexistence at the same time of organic heart disease, there was one case at the Children's Hospital of a girl who had been under observation since 1883. She had a severe fright caused by a dog rushing at her. An attack of chorea followed. A year or two later there was another attack, but during this time there was no rheumatism, and no murmur could be heard at the heart. Several years later she came to the hospital and had a slight murmur at the heart and slight symptoms of heart disease. These have gradually increased so that the child is now very ill, if not dead, from organic disease of the heart. During the last few years she has had a third attack of chorea, but she has never had rheumatism.

International Sanitary Conference at Venice.— On the 5th of January next, Venice will be the seat of an international conference, the object of which is to reorganize the Sanitary Commission of Alexandria and the conditions under which vessels in quarantine may be authorized to pass through the Suez Canal. Invitations to assist at it have been issued by the Austro-Hungarian Government in concert with those of Great Britain and Italy. The Italian delegates are already known to be Count D'Arco, Under-Secretary of State to the Minister for Foreign Affairs; the Commendatore Pagliani, Director of the Sanitary Board; and Signor Carcano, Consul.

A CASE SUGGESTING THE ADVANTAGE OF REPEATED SUPRAPUBIC ASPIRATIONS OF THE BLADDER, AS COMPARED WITH CATHETERIZATION FOR THE RELIEF OF RETENTION OF URINE DUE TO PROSTATIC HYPERTROPHY.[1]

BY FRANCIS SEDGWICK WATSON, M.D.

IN the course of the discussion following a paper upon "The Non-Operative Treatment of the Hypertrophied Prostate," read by Dr. A. T. Cabot, before this Society last winter, I quoted the experience and advice of Mr. Reginald Harrison in regard to the value of repeated aspirations of the bladder above the symphysis pubis, to relieve the overdistended organ, in certain cases of urinary retention due to prostatic hypertrophy, and referred to the small number of cases reported by Mr. Harrison (in one of which the aspirations had been very frequently repeated), in illustration of the possible benefits from this treatment.

To-night I wish to add another case, occurring in my service at the City Hospital last summer, in which the patient's condition seemed to me to be so hopeless at the time of his entrance, that I was quite unprepared for his recovery, which it seemed to me at the time, was, in some measure, at least, contributed to by even the small number of aspirations that were employed.

There is no condition in the progress of a case of prostatic hypertrophy, the treatment of which involves so much danger to the patient, or presents so embarrassing a dilemma to the surgeon, as that of relieving an overdistended bladder, which after carrying a large quantity of residual urine for many weeks or months, has finally reached the point of overflow or complete urinary retention.

The dilemma is this: If such a bladder be emptied by the catheter, even with all the precautions which should always be used, such as cleanliness of the instrument, gentleness in its passage, the selection of the best form of catheter, the gradual withdrawal of the urine by repeated catheterizations, removing but a few ounces at first at each time, and replacing a portion of the quantity of urine withdrawn at each use of the catheter with some one of the milder antiseptic fluids, keeping the patient in bed, or at least in the house, etc., still then the subsequent occurrence of "urinary fever" with frequently a fatal termination, is an experience with which we are most of us familiar.

If, on the other hand, such a bladder is not relieved, death from uræmia and exhaustion is practically inevitable within a comparatively short time. It will be of decided value, therefore, if it can be shown in a large number of cases that the gradual emptying of such bladders can be more safely accomplished by repeated aspirations or by beginning in this way, and later substituting the catheter. My trial of this method of treatment in the following case was but a partial one, and should be considered as suggestive of its possible benefits, rather than as a proof.

The patient was fifty-nine years old; had had symptoms of prostatic enlargement for two years; for five months very frequent urination; an overflow bladder for three weeks. Urine alkaline, pale, specific gravity 1005, a faint trace of albumen. The bladder was distended to within two inches of the umbilicus. Rectal examination showed a moderate bilateral hypertrophy of prostate. The patient was in an exceedingly feeble and prostrated condition, and looked like a man likely to die in a few days.

June 24th. Aspirations above pubes begun and continued, as follows:

	Morning.	Afternoon.	Evening.
June 24th	ʒ ix.	ʒ xv.	ʒ xij.
June 25th	ʒ xv.	ʒ xv.	ʒ xiij.
June 26th	ʒ vij.	ʒ ix.	ʒ xx (cath.).

June 27th. The use of the catheter was begun. Up to this time the patient had improved in every way, and the specific gravity of the urine had risen from 1005 to 1013. The catheter was used three or four times in each twenty-four hours, a larger quantity of urine being withdrawn at each time, and a small quantity of boracic acid being substituted for a part of the urine withdrawn. Polyuria, that is so frequently observed to occur under these conditions, occurred as soon as the catheter was begun, and the quantity of urine withdrawn during one period of twenty-four hours, was one hundred and eighteen ounces and then the bladder was not wholly emptied at any time. The final evacuation of the bladder was not accomplished until three weeks after beginning to use the catheter.

During the three days in which the aspirations were carried out, there was no unfavorable symptom, but very marked improvement in every regard, and the rapid rise in the specific gravity of the urine, 1005 to 1013, was noteworthy. Two days after beginning the use of the catheter, the patient had a chill and rise of temperature to 104°; was delirious for a few hours but improved on the following day, and from that time progressed steadily toward recovery, leaving the hospital at the end of two months from time of entrance, with good appetite and strength, *and what is most unusual in such a case, he had regained the power of wholly emptying his bladder voluntarily*, so that there was no residual urine.

I could not help feeling at the time that this patient would probably have died had the catheter been used at the outset. There is, of course, no proof that this would have been the case, but the rapid gain and entire absence of disturbance while the aspirator was being used, and the occurrence of the chill, high temperature, and delirium, following soon upon the first use of the catheter, is suggestive. I was driven in this case to substitute the catheter for the aspirator at the end of the third day by a threatened abscess formation at the site of the punctures, else I should have persisted in its use until the bladder had finally been emptied — by gradually withdrawing larger quantities of urine at each successive aspiration.

This method of treatment seems to merit more extended trials. It is true that occasionally a moderate urinary oozing will take place through the puncture into the prevesical space — but this is not usual if a fine needle be used. The rarer accident of wounding a peritoneum that has become bound down to the tissues about the symphysis pubis by inflammatory processes, is so slightly probable that it can be disregarded. The pain caused by the punctures is ordinarily so slight that it may be disregarded. The punctures should be repeated until the bladder has been at some one aspiration, very nearly emptied, unless there is some good reason for desisting.

Of course this procedure is in no sense a new one, and has been often employed for this purpose, but it seems to be lost sight of from time to time, which is my reason for presenting this case.

[1] Read before the Boston Society for Medical Improvement, October 26, 1891.

Clinical Department.

A CASE OF AMMONIA-POISONING, WITH UNUSUAL FEATURES.[1]

BY PROF. J. M. DACOSTA, M.D., LL.D., OF PHILADELPHIA.

Patrick G., a gang-boss, or foreman of a gang of laborers, white, forty-six years of age, was brought to the accident-ward of the Pennsylvania Hospital a little after midnight on the morning of November 24th, with the statement that about two hours previously, he had swallowed, by mistake, a quantity of a strong solution of ammonia, of the kind used for cleaning grease from clothing, known as "household ammonia." It was uncertain how much passed into the œsophagus, as he claimed that he took a gulp and, finding that he had made a mistake, immediately spat it out again. A physician administered vinegar, and subsequently milk in considerable quantity. He had been in excellent general health up to the time of the accident. Upon admission, his mind was clear, his skin natural, his pulse 110, regular and of good volume. He had not vomited. The respirations were labored and somewhat stertorous, 28 to the minute. His voice was muffled and husky, apparently the result of some œdema of the glottis. The lips, gums and tongue were swollen; the latter has its epithelium entirely taken off, leaving exposed a red, raw surface. Two days later, when the swelling of the tongue had subsided sufficiently to make a digital examination, it was discovered that the tonsils were very much enlarged, nearly meeting in the middle, and the uvula was elongated and œdematous. Under the treatment instituted upon admission — ice-compresses to the neck, applications of oil and demulcents to the tongue and throat, and a milk diet — he improved markedly upon the day after entering the hospital; but, on the second night, he complained of headache, and was delirious. This condition only existed for the one night, however, and these were the only nervous symptoms presented during the time he was under treatment. Soon after admission, the stertorous breathing disappeared; but it was followed by a slight cough with considerable blood-streaked expectoration, which may have come principally from his mouth where there was extensive excoriation. He also complained of pain in the left side of his chest; but physical examination failed to detect any abnormality in the lung. It should be stated, in connection with the swelling of the tonsils two days after the accident, that there was also enlargement of the lymphatic glands under the angle of the jaw on each side of the neck. His temperature was 99.5° upon admission, and the next morning it was 100.5°; subsequently it remained between 99° and 100°.

There was one feature in the case which demands special consideration. On the day after admission, it was noted that his urine was diminished in quantity, not more than twenty-six ounces in twenty-four hours. It was turbid and high colored, specific gravity 1,024, slightly alkaline in reaction and heavily albuminous, about sixty per cent., estimated by bulk of coagulum after boiling in a test-tube. The examination with the microscope revealed red-blood disks and leucocytes, also numerous epithelial, hyaline and slightly granular casts. This was coincident with the headache and delirium already mentioned.

[1] Abstract of a Clinical Lecture, delivered at the Pennsylvania Hospital, Phila., November 28, 1891.

On the 26th, it was recorded that the urine showed merely a small amount of albumen, with only a few epithelial and hyaline casts. The following day the urine was found to be entirely free from albumen; but, on the morning of the 28th, a trace was detected. For this condition of acute Bright's disease of the kidneys, he was given infusion of digitalis, commencing with a dessertspoonful dose, at first, afterwards increasing to a tablespoonful, so that he took about two ounces daily.

Under the use of glycerine and water to the tongue and diluent drinks, the mouth was restored to a healthy condition and the œdema of the uvula passed away; his voice also regained its natural tone. It was considered advisable to retain him in the ward for a few days as a matter of precaution, but he was convalescent when presented to the class.

This case affords an illustration of the effects of swallowing a strong solution of ammonia by a man, who, up to the time of this accident, was in excellent health. The first point to which I will call attention is the local effect of the strong alkali upon the mouth and throat. Swelling of the tonsils and tongue occurred almost immediately, with œdema of the uvula, and in this acute inflammation the larynx participated, so that death by suffocation, appeared imminent. After the subsidence of the acute swelling, the epithelium came off, making it difficult for the patient to take any nourishment. By the local use of glycerine and water by demulcent drinks and a strict milk diet, he was enabled to keep up until the severe symptoms subsided. With the local inflammation just mentioned, there was slight fever; but the most interesting point in connection with this case is the kidney disorder. This was characterized at first by evidence of congestion or hyperæmia, which must have rapidly passed into acute tubal nephritis. The large amount of albumen at the beginning was partly due to hæmorrhage from the parenchyma of the kidneys. This was followed by the free desquamation of renal epithelium, in the form of epithelial casts, associated with exudation casts, some of which were granular. Not the least interesting point was the rapid subsidence of the kidney affection under the influence of the digitalis and the milk-diet. The casts all disappeared, and of the albumen an occasional trace only remained. It is natural to ask what gave rise to the acute Bright's disease in this case. Of course, it could be suggested that it was due directly to the ammonia, which, after being swallowed, entered the blood and passed out again by the kidneys. While that might be partly true, it occurred to me that the kidney affection might be likened to that which happens in cases of burns of the skin. In such cases, as I pointed out a number of years ago, we have an acute parenchymatous nephritis developed, when the skin is burned to any considerable extent. Why should we not have a similar state of affairs resulting when the mucous membrane is extensively burned, as it was in this case with ammonia? However, whatever be the exact cause of the kidney disorder, the inflammation was most manifest; it was not simply a case of congestion, but a typical case of acute parenchymatous inflammation, as the tube-casts proved. In connection with this, we might ask, "Would the condition of the kidneys not account for the headache and the delirium?" Furthermore, might not this kidney lesion be the cause of what has been noticed in some instances of ammonia-poisoning, the convulsions? These have been thought by Lange to be due to direct stimulation

of the motor function of the spinal cord, but they may well be uræmic in character; the delirium and headache in this case certainly bear this interpretation.

As regards treatment of this case, in point of fact, it was the immediate administration of the vinegar and the milk, and the local application to the burnt parts, by the physician who sent him to the hospital, that was of the greatest service to the patient. There is always great risk of the rapid development of œdema of the glottis in these cases, where a powerful irritant has been swallowed, and the resident very properly prepared everything for the prompt performance of tracheotomy, which fortunately was not rendered necessary by increase of the swelling. The importance of examination of the urine, in these cases of ammonia-poisoning, was well illustrated in this case. The condition was met here by the administration of digitalis, a milk-diet and an occasional laxative. The recognition, early in the course of the case, of the disease of the kidneys, and the prompt resort to appropriate treatment, might serve to avert lesions which would perhaps be of more danger than the primary effects of the ammonia, in the mouth, throat and surrounding parts.

The urine, in this case was found to be slightly alkaline, which was probably due to the presence of blood in the urine, or to the increased alkalinity of the blood from the absorption of the ammonia. It has been stated that, in some cases of ammonia-poisoning, the urine has been found to be acid; and this has been attributed to oxidation, by which the ammonia is converted in the blood into nitric acid. We have no evidence here that any such change took place.

In conclusion, I will remark that it is always of importance in cases of ammonia-poisoning which may be attended by acute inflammation of the kidneys, to keep the urine well-diluted, by the administration of such bland liquids as the patient can swallow. The question of the amount of influence which the perturbation of the nervous system, incident upon the fright and the shock had in the production of the disease of the kidneys, we cannot at present solve. The nervous system certainly governs the functions of the kidneys, and undoubtedly congestion of these organs might have such a cause as has just been suggested, yet we are scarcely prepared to assume that the inflammation may be attributed to a nervous cause alone.

RECOVERY IN A DESPERATE CASE OF ACONITE POISONING.

BY G. H. TUTTLE, M.D., EAST CAMBRIDGE, MASS.

Two cases of aconite poisoning have occurred in Cambridge during one week recently. The first resulted fatally, the second recovered. In the first case five and one-half drachms of the tincture were ingested, in the second, seven and one-half drachms. Medical assistance was obtained within ten minutes in the first case, and not until forty-five minutes had elapsed in the second. The treatment used in the first instance I am unable to state, but of the second case I can speak as an eye-witness.

The victim of the second poisoning was a large and strong person of decidedly alcoholic habits; and at the time of the accident he was on the verge of *mania a potu*. The man had been in the habit of taking bromide at such times and in this case he confused it with the aconite. The quantity of the officinal tincture taken was within ten drops of an ounce. The man, at the time, had been drinking, but his condition was not noticeable. The aconite was taken at 10.30 A. M. At 10.50 he complained of feeling sick; but no attention was paid to this on account of his known alcoholic habits. At 11.15 he first vomited, and from this time on he continued to have nausea and frequent ejections of small amounts of yellowish fluid. A little mustard water was given him by the family, but his resistance was so great that only a small amount entered his stomach and no effect was produced. At 11.30 two doctors arrived. They stayed an hour, and during that time injected three syringefuls of brandy with a little tincture of digitalis under the skin. Only once during the whole hour could the pulse be felt at the wrist. The priest was called and a fatal prognosis given to the family.

At the request of the doctor in charge of the case, I consented to stay with the man and continue the treatment of brandy and digitalis with any other additional means which should occur to me. All three doctors considered the man moribund. At this time — one hour and a half after the poisoning — the patient was lying upon his back on the floor. The face was flushed from repeated vomiting; the respiration very slow and noiseless, being barely recognizable. Muscular relaxation was great, the arms and legs, when raised, dropping helplessly. The pupils were insensible to light. The pulse at the wrist could not be detected. The arms and legs were quite cold as far as the trunk. No convulsions had occurred. The man was entirely unconscious.

I concluded that nothing but heroic measures would avail to save him. I injected as fast as possible three syringefuls of brandy, and twenty drops of digitalis under the skin. Twenty drops each of tincture of digitalis and nux vomica plus brandy and a little molasses were injected into the rectum. Mustard water was poured down the throat freely; and ether and ammonia given by the nose as fast as possible. Hot jugs and blankets were used to retain the body heat. In about twenty minutes the arms became warm as far as the elbows, and the pulse became perceptible at the wrist. Free vomiting had followed the exhibition of mustard water and this, too, seemed to rouse him somewhat. Ten drops more of digitalis and two syringefuls of brandy were now injected. The pulse strengthened somewhat, the man opened his eyes and spoke incoherently. In another half-hour he was able to roll over upon his side and vomit intelligently into a basin. Hypodermics of brandy and five-drop doses of digitalis were injected every twenty or thirty minutes. Later brandy and carbonate of ammonia were given by the mouth, not at first retained in the stomach, but finally kept down for twenty or thirty minutes.

As he recovered, he complained of his head feeling swollen and of pins and needles sticking into him everywhere, also of great numbness. In four hours' time — five and one-half hours from the time of ingestion — he seemed perfectly conscious and spoke intelligently to members of the family. About this time he complained of burning pain in the stomach and begged every minute or two for water. Mucilage of acacia with bismuth and soda was then given him and continued for several hours; also small pieces of ice and brandy by the stomach.

Seven hours after the poisoning the patient fell into a quiet sleep which lasted most of the night. Strict orders were given not to raise him from the recumbent position. Next morning he woke up weak and oblivious of almost everything which had passed on the previous day. Wherever an injection had been made sloughs came away. The sloughs, however, were superficial, except in one place where the fluid had penetrated the subcutaneous muscular tissue of the forearm which was much inflamed at the time of writing.

Three days after the poisoning, the patient, though still weak, was able to be about and to do light work.

Medical Progress.

RECENT PROGRESS IN ORTHOPEDIC SURGERY.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D.

THE TREATMENT OF SPASMODIC TORTICOLLIS BY RESECTION OF THE SPINAL NERVE.

In an exhaustive article on this subject, in the *Revue d'Orthopedie*, July 1, 1891, the writer cites the following result of cases which he had collected: Out of 24 cases there were 11 with cure; there was considerable improvement in seven; there was slight improvement in two; a temporary improvement in three; one death from flagrant erysipelas. The conclusions which he draws are as follows: that in spasmodic torticollis, where all other methods have failed, the resection of the spinal nerve is justifiable. This operation is easy to do, is not dangerous, and can in a majority of cases produce excellent results (that is, in 18 out of 24). The procedure which is the preferable one is that which consists in making an incision along the anterior border of the sterno-mastoid, starting from the summit of the mastoid process. The cure is rarely immediate, but there remain for some time spasmodic movements produced, not by the contraction of the sternal mastoid and the trapezius, which are paralyzed, but by the other muscles. These secondary movements diminish gradually and finally disappear, either in whole or in part; in a small number of cases they persist. If the movements persist, one can have recourse to resection of the branch of the fascia or of the posterior branch of the cervical nerve, after the procedure of Keen. After the operation it is necessary, to complete the cure, to employ massage for the muscles already contracted, or the wearing of an apparatus, which should be worn several months or longer.

ON THE OPERATION AND PATHOLOGY FOR CONGENITAL WRY-NECK.[1]

The author's investigations are based upon three cases of congenital wry-neck operated on by open incision by Volkmann in 1880. During the operation he was able to demonstrate a point of fibrous degeneration of the muscles. A little portion of the muscle at the point where degeneration existed was excised, and histologically one could demonstrate that the muscular fasciæ were diminished in number and atrophied. The name of muscular callosities, or fibrous myositis, described the condition. The author mentions that the section by open incision was already done by Roonhuysen in 1670. The subcutaneous section has the advantage in cosmetic results; open incision has the advantage of greater thoroughness. Volkmann made the incision a longitudinal one; and in this way the degenerated muscle can be removed, which the author thinks is less readily done by transverse incision.

The following directions are advised by Keen, of Philadelphia, for the division of the cervical nerves:

A transverse incision is made half-way below the tip of the lobule of the ear, extending from the median line of the neck backwards, or even forcing slightly the median line. This incision should be two and a half to three inches long. The trapezius should be divided transversely, and the occipital nerve can be found as it diverges from the complexus and enters the trapezius. The nerve emerges from the complexus at a point situated in this aponeurosis and the median line, ordinarily half an inch above the incision — sometimes higher — and then enters into the trapezius, and can easily be found. The complexus muscle should be divided transversely at the level of the nerve, and the second cervical nerve if found. The inferior oblique muscles can be recognized, following the sub-occipital nerve towards the spinal column. The sub-occipital triangle can be recognized, formed by the two oblique muscles and the large posterior muscle of the neck. In this triangle the sub-occipital is found. The nerve should always be tied with a large catgut.

CONGENITAL WRY-NECK.[2]

The writer believes that Stromeyer's explanation of the origin of congenital wry-neck is a faulty one. As is well known, Stromeyer believed that the deformity was caused by a rupture of the sterno-cleido mastoid at birth. Petersen thinks that there is no clinical or pathological proof to justify this belief; and he has endeavored to sustain his views by experiments upon animals. He thinks that the deformity is due entirely to uterine pressure, and that the nurse or attending physician is in no way responsible for the existence of the deformity. The view of Stromeyer is supported by Colombara, and by Maas, as well as by Billroth, but the writer claims that they have not sufficient proof to justify such an opinion. He claims that there is no single recorded case of a rupture of the sterno-cleido mastoid in medical literature causing the deformity.

SYPHILITIC DISEASE OF JOINTS.[3]

Mr. Anthony Bowley reports six cases in which the joints became affected in syphilitic patients, and in whom the joint affection was probably specific. In one fatal case, gummata was found (two on the synovial membrane), while the lower part of the femur was roughened, and the periosteum thickened and loose. Five of the cases yielded quickly to the specific treatment; the sixth died. One of the cases presented a synovitis resembling rheumatic or traumatic; two were periostitis of the articular ends of the long bones; two were examples of gummata of the synovial membrane; and in one the joint was involved secondarily to a gumma in the muscles, and resulted from the extension of the primary lesion.

STATISTICS OF DEFORMITY.[4]

The writer has collected the following statistics: Out of 67,919 patients, 1,444 were afflicted with some

[1] Villert: Centralblatt für Chirurgie, September 20, 1890, No. 38.

[2] Petersen: Zeitschrift for Orthopedic Surgery, i, i, p. 112.

[3] St. Bartholomew's Hospital Reports, 1890, vol xxvi, p. 83.

[4] Hoffa: Munich Medical Wochenschrift, 1890, No. 23.

form of deformity, that it is to say, two cases of deformity to 100 surgical patients. The numbers of men and women were equal. The ten first years of life furnished the larger contingent of deformities, and this number diminishes rapidly with increase of age. Congenital deformities are eight times less frequent than the acquired deformities. Of the latter (1,175 in all), 226 were rickety, 89 paralytic, 142 tuberculous, and 944 static. In regard to the seat of the deformity, it was equally frequent on the right as on the left side; twice as often bilaterally as unilaterally. The inferior extremities and the trunk were affected, rarely the neck and the upper extremities.

MYOSITIS OSSIFICANS.[5]

A case of this disease is reported occurring in a child of four, otherwise well and of good family history. From the age of two, at intervals, "lumps" appeared on different parts of the body, which disappeared spontaneously. At the time of observation, there was restriction in the motions of the head, shoulder and elbow, due to a semi-ossified condition of the muscles. There were several nodes scattered over the head and back, and the tendons of the teres major and the latissimus dorsi, and the sterno-mastoid muscles were the seat of the most pronounced charge. For the last two years, the child had been subjected to general constitutional treatment, and to the iodide, mercury, arsenic and phosphorus, but without apparent benefit. The node in the left axilla was cut down upon, and the teres major was found to be a complete mass of bone, with a fibrous attachment at either end; and other muscles were in a similar condition.

OSTEOMYELITIS DEFORMENS.[6]

In an article on this subject, Dr. E. Vincent gives in detail a case in many respects unique, and reviews the forms of osteomyelitis in a thorough way. The case is of a girl of thirteen, with a uniform enlargement of the left tibia, presenting a pronounced antero-posterior curve, and with a resulting genu valgum. The enlargement was, in general, smooth, affecting the length as well as the volume, and had existed about four years. There had been but little pain or interference with the use of the limb, and the general health had not suffered, except that there was distinct anæmia. By a longitudinal osteotomy, a section of the bone was removed, and in structure this was found to be everywhere dense and resistant, with no sign of abscess, sequestrum, cavity or focus of inflammation, but the medullary canal had entirely disappeared, having been replaced by a process of ossification. Eighteen months later there was shown a diminution in the volume of the bone, but the same difference in the length. The walk had improved. The patient gave no evidence of specific taint other than that of a double iritis at the age of twelve.

The different forms of osteomyelitis are carefully and thoroughly considered, but all are excluded except that of a diffuse syphilitic, the result of a late manifestation of this taint, acquired at an early age or else congenital. In many ways it does not correspond to the recognised forms of this disease, as it was confined to one bone, and in the absence of severe nocturnal pains, of exostosis, of foci of the disease, or of cavities of old processes. The author suggests, however, that had he pursued the examination to a greater extent, some evidence of this might have been found. He inclined to regard it as a late manifestation of syphilis, appearing in a manner rather unique, and suggests the term of "*a'ostéo-syphilome pandia physaire hypertrophiant.*"

DEFORMITY OF THORAX DUE TO NASAL OBSTRUCTION.

Rédard, in the *Gazette Médicale*, Paris, (March 22, 1890, p. 124), gives the result of his investigations, with the following conclusions: (1) Nasal obstruction is the frequent cause of kyphosis, scoliosis and thoracic deformities. The scoliosis is generally dorsal, with a long curve and not pronounced. The thoracic deformities noticed are due to nasal obstruction due to adenoids rather than to enlargement of the tonsils. The treatment of nasal obstruction improves certain forms of deformities of the thorax quite rapidly, and special gymnastic exercises are not to be advised until the affection of the pharynx or nose is cured.

The same subject is investigated by Phocas in an article in the *Revue d' Orthopedie*, in May, 1890.

An explanation of this deformity is given differently by different writers; some refer it to the atmospheric pressure, others to the action of the diaphragm. The chief cause, however, is the narrowing of the naso-pharyngeal canal, and the flexibility and the weakness of the arch of the ribs in a child accomplish the rest. The simple narrowing of the canal by enlargement of the tonsils is in a majority of cases not sufficient to produce the deformity; adenoid hypertrophy added to this, combined with a lack of resistance in the thoracic bones, brings about the distortion.

DISSECTION OF THE CONGENITAL CLUB-FOOT.[7]

A careful dissection of the foot is given, with illustration, showing the alterations in the shape of the bone. There is also an excellent article by Santon in the same magazine on the same subject, and they both illustrate the osseous alterations which are to be seen in this deformity. The conclusions which the latter writer draws are, that the causes of the deformity, and therefore the obstacles to reduction, are many, and are seated, both in the skin and in the soft parts, as well as in the relation of the bones to each other. If the muscles and ligaments were the only things, the treatment would be comparatively easy, but unfortunately there are osseous obstacles, due to the change of shape of the bones.

TIBIO-TARSAL RESECTION BY THE REMOVAL OF THE ASTRAGALUS.[8]

The writer, who is the chief assistant of Ollier, recommends the removal of the astragalus in cases of tubercular disease of the ankle as a method of treatment, and as preliminary to the ordinary resection. The advantage that he claims for the method is that it gives much greater room for inspection of the diseased part than the usual method of resection. The results are excellent. It should be remembered that the removal of the astragalus leaves a cavity in which pathological fluid may collect, and that this should be drained, and that there should, therefore, be counter-openings on each side of the tendo Achillis. Ollier uses two anterior incisions for the removal of the astragalus.

[5] Mr. R. Gordon Macdonald: British Medical Journal, 1891, August 21, p. 478.
[6] Revue d' Orthopedie, 1891, vol vi, p. 401.
[7] Rochard: Revue d' Orthopedie, September 1, 1891.
[8] Ballas: Revue Chirurgie, August, 1890.

PHELPS'S OPERATION FOR THE TREATMENT OF EQUINO-VARUS.[9]

The writer collects thirteen cases treated by Phelps's method with good results; and statistics by Schreiber show eleven cases treated by this method with success. The operation of Phelps was done by him on two children three years of age, one thirteen months and another eight years. He draws the following conclusions: that the orthopedic result obtained by Phelps's method is excellent, and generally superior to that which follows extirpation of the astragalus. The operation is applicable not only to children, but also to adults. The dissective treatment is of great importance.

FORCIBLE CORRECTION OF CLUB-FOOT.[10]

König is an advocate in all cases of club-foot, of subcutaneous tenotomy of the tendo Achillis and of the plantar fascia before forcible correction. The patient then is placed on a table, turned on the side, and knees well fixed; the convex portion of the foot rests upon a triangular piece of wood. The operator seizes the foot in such a way that he can let his weight fall upon the front of the foot by means of one hand, holding the back of the foot with the other; the wooden block acting as the fulcrum of resistance, the astragalus resting upon this. In this way great force can be used, and the ligaments can be stretched or torn. The patient is then turned upon the back, and forcible flexion is used, the leg being held by the hand of an assistant. Sometimes one sitting is enough, but often two or three or even four are necessary. Between these the foot is held in position by bandages. When the patient is able to go about, apparatus is used. The second sitting is required, as a rule, in about fourteen days. The rupture of the skin in the hollow of the foot is sometimes met, but the wound is stitched with catgut, and heals under the dressing.

TREATMENT OF CLUB-FOOT BY OSTEOCLACIS OF TIBIA AND FIBULA.

Grattan, in the *British Medical Journal* (May 2, 1891), advises the the treatment of the most severe forms of club-foot by osteoclacis of the tibia and of the fibula in addition to the operations on the tarsus. He removes the astragalus first, but afterwards he recommends the fracture of fibula and tibia at the junction of the middle and lower third. At the end of ten days after the fracture, the splint which holds the limb in position can be removed. The subsequent treatment is of great importance to prevent the foot from turning in its old position. The patient need not wear shoes, but should walk barefooted.

OPERATION TREATMENT OF CALCANEUS.[11]

There are two operative methods; one recommended by Allandale, Willett, Walsham, Gibney and Kirmisson. It consists of shortening the tendo Achillis. The second by Nicoladoni and Hacker consists of transplantation of the peroneus fascia into the tendo Achillis. Both of these operations have value. As to which is preferable, the writer prefers the shortening of the tendo Achillis, if the gastronemius and soleus are healthy; that is, if they react to electrical irritation, the slightest irritation being of value, and found in a majority of cases. The plantar fascia is of importance, as it may be contracted. In only a certain number is the method not of use, and those are where there is deformity of the os calcis.

LINEAR OSTEOTOMY OF THE TIBIA AND THE FIBULA IN PAINFUL FLAT-FOOT.

Kummer describes this method of operation in a case of flat-foot following fracture. He adopted the method of osteotomy advocated by Krendelesburg, in *Archives of Chemical Surgery*, (Vol. XXXIX, 1889, p. 751). The incision is three centimetres long made on the crest of the tibia, three centimetres above the tibio-tarsal articulation. The periosteum is detached from the limb, lifted, and by means of a needle the chain saw is passed round the tibia, and the same thing is done by the fibula. The foot is immediately put in position, and the pronation changed to a slight supernation. The result reported is excellent; as are the results mentioned by Krendelesburg.

CONGENITAL FORWARD LUXATION OF THE TIBIA.

Pochas[12] has collected twenty-three cases of this rare affection, which was first described by Chatelain and Malgaigne, and has been mentioned by several French writers. In eighteen the deformity occurred in children otherwise well-formed; in five where there was some malformation. The characteristic was hyper-extension of the leg from the thigh; in other words, a bending of the knee in a reverse direction, as if the extensors of the thigh had become flexors. In thirteen of the patients the anterior face of the leg was in contact with the anterior face of the thigh. The obstacles to correction are: (1) muscular, due to the contraction of the anterior portions of the thigh; and (2) osseous, from the projection of the femoral condyles. The muscular resistance can be overcome; the osseous is insurmountable, unless the limb is reduced. In certain cases reduction can be easily made by means of manipulations. In other cases reduction has been unsuccessful, although the limb can be made nearly straight, but complete correction has not been possible. Weinlechner considers a complete cure as very rare, on account of the condition of the ligaments; while others take a more favorable view of the case. Treatment consists in reducing the deformity, and then retaining the reduction. In certain cases the reduction is easy, but the retention of the reduction is difficult; in other cases reduction cannot be obtained; in the majority of cases, simple means, such as plaster-of-Paris or pasteboard splints are sufficient to retain the limb in the corrected position. In a few cases simple treatment is insufficient. In these it is better to attempt reduction even at the risk of an operative interference. Such operation consists of a manual osteoclasis above the condyles.

GENU RECURVATURE ON BOTH SIDES.[13]

Mr. Edmund Owen describes a congenital case of this condition, in which the dorsum of each foot usually rested on the clavicle, with the knees bent sharply backward. The backward displacement of the tibia was such that the inter-condylar notch could be clearly defined in the popliteal space, and there was a transverse furrow at the front of the knee. Flexion in the proper direction was impossible, even under chloroform. Mr. Owen operated by section of the quadriceps tendon through an open transverse incision, which exposed the trochlear surface. Two months afterwards, the

[9] Motta: Policlinico, No. 2, 4, 1890.
[10] Archives of Clinical Surgery, No. 40, p. 813.
[11] Revue d' Orthopedie, No. 5, 1890.
[12] Revue d' Orthopedie, January 1, 1891, p. 36.
[13] Medical Society Transactions, vol. xiv.

knees could be flexed to 90°, and the child was beginning to acquire some power over them.

CONTRIBUTION TO THE OPERATIVE TREATMENT OF THE DEFORMITIES OF THE LOWER EXTREMITIES.[14]

The number of operations performed by this surgeon is 170. The osteotomies are 120. Among these osteotomies, 16 were by the method of MacEwen; 28 were subcutaneous, and 48 open. Six were made on the femor, 14 on the tibia (by Billroth's method), 22 on the shaft of the tibia, and two wedge-shaped resections of the periosteum. Motta uses continuous extension by weight, following osteotomy, in 57 cases; and he does not use manual correction. The corrective action of weight shows itself in three or four days. Many of the osteotomies were done with open incision. The results were excellent. As a rule, there was no reaction. In 120 osteotomies there were four with suppuration, and in two of these cases there was a sequestrum; in five cases gangrene of the limb, and amputation. The osteotomy was done according to the method of Billroth, and the knee contained pus. The patients recovered. The callus is ordinarily solid in thirty-five days. Motta has also done 17 osteoclases, and 33 forcible corrections. He does not advise the use of appliances after the operation.

OSTEOCLASIS.[15]

Boy, fifteen years of age, always well, presented himself with a history of limp in his gait for the last two years. He was easily fatigued while walking. Never any swelling or pain in the hips. He was never obliged to stay in bed. The thighs were in a position of forced adduction. The upper part of the body leaned forward while walking; the inferior lower extremities were shortened to the extent of a centimetre; the top of the great trochanter was three centimetres to the right; the left two centimetres above the Nelaton line. As there was no question of coxalgia or of congenital dislocation of the hip or of fracture, the case must necessarily be one of curvature of the neck of the femur, more marked on the right than on the left, and due to delayed rickets. Massage wrought some improvement in the symptoms. The author refers to the articles of Muller and Lauenstein. Readers will recall the case reported by Dr. Monks, of this city, in the *Boston Medical and Surgical Journal*.

ARTHRODESIS.[16]

Case of infantile paralysis of the left leg in a child of fifteen years. The child could neither walk nor stand upright. December, 1889, the operation for arthrodesis of the knee was performed, with suture of the bone. There was fixation of the patella, and there was a complete union. Two months afterward arthrodesis in the tibio-tarsal and medico-tarsal ligament was performed. Winiwarter found that the osseous union was obtained with more difficulty in the tibio-tarsal articulation, which in this case was fixed in part by a fibrous mass. The result was excellent, and the patient was able to walk with a cane, and could stand without any support for a portion of the day and could work as a laborer.

Arthrodesis was first introduced by Albert, in 1878; since that time it has been often done, especially, in Germany. It has been little attempted in France, though Kirmisson has attempted it in some cases. It is analogous to a resection, but differs in the fact that in resection one ordinarily hopes to obtain success with some motion; in arthrodesis, on the contrary, one attempts to avoid movement.

The technique of the operation is most simple. One opens the joint with the same incisions which are used for resection, and divides the soft parts, avoiding the vessels, the nerves and the tendons, if possible, though this is of less importance than in resection. As soon as the bones are reached, the ligaments are pushed aside in such a way as to lay bare the articulation, and have all the articular surface apparent. The cartilage covering the bone is then laid bare, either by means of a little knife or by means of a gouge. These abrasions should be complete, and they should penetrate as far into the innermost corners of the joint — should be sufficiently deep — reaching as far as the osseous portion; but, as far as possible, it should be desirable to avoid causing much blood between bone. The application of the different ends should be as exact as possible. The suture of the fragment is not essential, but it may be necessary, and should be done by silver wire. Some surgeons, however, use catgut. After operation the limb should be immobilized by a plaster.

(To be continued.)

[14] Motta: Archivio d' Orthopedia, 1891.
[15] Rotter: Munich Medical Wochenschrift, 1890, No. 32.
[16] Winiwarter: Revue d' Orthopedie, March 1, 1891, p. 150.

Reports of Societies.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.

G. G. SEARS, M.D., SECRETARY.

REGULAR Meeting, Monday, October 26, 1891, the President, DR. FREDERICK I. KNIGHT, in the chair.

DR. A. T. CABOT reported a case of

INTERNAL STRANGULATION.

The patient was a child of five, and had been seized suddenly with pain in the abdomen three days before he was brought to the hospital. This pain continued with more or less severity from the time of seizure. The bowels were obstinately constipated, and resisted all efforts to produce movement by injection.

At the time the child was seen he had become drowsy, and had a very quick and feeble pulse. The face was somewhat cyanosed, although the extremities were warm. The bowels were moderately distended, and while there was no excessive sensitiveness, palpation caused some pain in the lower part of the abdomen. No tumor could be felt, although there was somewhat more resistance in the right hypogastrium.

A full injection of water was given the child in an inverted position, in the effort to overcome an invagination should such exist. This was, however, of no avail, the water returning exactly as injected. It being evident that some obstructive lesion existed in the abdomen, a laparotomy was decided upon.

The abdomen was opened in the median line midway between the pubes and the umbilicus. A gangrenous coil of intestine immediately appeared in the wound. Following this down, it was found caught under a little band about a line in diameter. This band was quickly divided with scissors, and the bowel released. The gangrenous portion of bowel was rapidly removed, bleeding points in the mesentery being caught and tied, and the two extremities of the bowel were brought up

and secured close together in the lower angle of the wound, so that if the child survived the operation, it should be possible later to restore the continuity of the bowel by a plastic operation. The operation was done with the greatest possible speed, the child's condition not admitting of delay. Although he came out of his ether well and recovered his intelligence, he lived but a few hours.

This operation was of especial interest on account of the extreme facility with which it was done. Had the case been seen while the child's strength still held out, and before the bowel became gangrenous, there was no reason why he should not have made an easy and rapid recovery.

This shows the importance of submitting cases of acute intestinal obstruction to the surgeon's knife as quickly as possible after the diagnosis is made.

The band under which this strangulation occurred, tense and fibrous in character, ran from the side of the lumen of the bowel to a point on the mesentery about three-fourths of an inch from the mesenteric attachment to the bowel. It was one of the bands so ably described by Dr. Fitz in his paper on "Omphalo-Mesenteric Remains."

Dr. Cabot showed the piece of bowel removed, which was a portion of the ilium about ten to twelve inches in length.

Dr. Farlow showed

A VERY LARGE NASAL POLYP

with a long pedicle, which he had removed from the post-nasal space, the pedicle having been attached to the upper and posterior part of the right nostril.

Dr. F. S. Watson reported

A CASE SUGGESTING THE ADVANTAGE OF REPEATED ASPIRATIONS OF THE BLADDER, ETC.[1]

Dr. W. C. Fifield: Listening to the remarks of Dr. Watson, I have been strongly impressed with the fact that history strangely repeats itself from one generation to the other. The plan of suprapubic puncture by means of trocar, and the introduction of the catheter through the canula, certainly was known and practised some as long ago as I was in Paris in 1852. It was somewhat in favor in different parts of Europe. I remember that Mr. Abraham Colles, in his "Surgery" (page 245), speaks of a man in his time who had puncture of the bladder above the pubis, and being an odd-tempered man he allowed the canula to remain and stopped it up with a plug of wood which he pulled out to empty the bladder from time to time as long as he lived. Somehow that fell into desuetude. I never saw it done but once and then with very evil result. That was, however, in the days before antiseptics were known or practised.

In regard to aspiration of the bladder, which my friend Reginald Harrison has written very well about: that I saw practised at the City Hospital somewhere in 1874 to 1876. There were repeated aspirations made there, but with the result that a man died, and I opened his bladder. There were little deposits of pus at the sites of punctures by the needle, and in one place quite a collection of pus. The outcome of that was not encouraging, and I am afraid if it came into general use the results might not be the best.

Puncture of the bladder, which was perhaps applicable more to cases of stricture than to enlargement of the prostate, was the puncture of Mr. Cock's through the perineum with a double-bladed knife. That, perhaps, in the hands of Mr. Cock was a very good operation. I saw him do it. I also saw a case at the City Hospital, where a gentleman did it with an amputating knife; but the autopsy showed that the knife penetrated the bladder (both coats), and went into the cavity of the peritoneum, although he was a distinguished operator.

Now we come to Dr. Davis, of Birmingham, Alabama, who, I think, has revived the operation of suprapubic puncture. He reaches the conclusion that there is no particular necessity of making a display about it, simply push the knife into the bladder, follow that by a catheter or large drainage-tube. He has also invented what he calls an epicystic fistula plug made of rubber or silver, which is retained and can be taken out and empty the bladder as he chooses. See pamphlet entitled "Epicystic Surgical Fistula." One of the very best papers ever written.

In regard to suprapubic aspirations opening the bladder, it is not always applicable in all cases of disease of the prostate, because in some diseases of the prostate that you have, one comes at last on a contracted bladder which will not hold more than a half-tumblerful before it is necessary to evacuate it. In one case of prostatic disease I now have under my care, for some reason a stricture, I think, has formed somewhere in front of the prostate, and a while ago I was called to relieve him of retention, and I think I tried every sort of small catheter that the world's market affords, and nothing would enter except an olivary pointed catheter bougie, made by Vergne, of Paris. I was enabled to relieve the man in that way. I can think of no operation more applicable in that case than that of Mr. Wheelhouse, since practised by Dr. Watson and self, and modified by Dr. Watson, who retained the small catheter as a guide — a most excellent improvement — passing the staff above it, then cutting on the staff.

I think of all the plans I have seen for the treatment of retention of urine with enlarged prostate, that, if the bladder has risen high enough above the pubis, this operation by Dr. Davis, of Birmingham,[2] will come into play more than any other. This, original with Dr. Watson, is a distinct advance over anything yet put forward in external urethrotomy in prostatic disease, by any author or operator in the world.

Dr. A. T. Cabot said that although antiseptic precautions made operative procedure much less dangerous than it formerly was, still, he preferred careful, repeated catheterization for the gradual emptying of an enlarged bladder rather than the suprapubic puncture, either with an aspirating needle or with a trocar, followed by the introduction of a small tube.

He mentioned one case which he had many years ago, of an enlarged prostate through which a catheter could not be passed without ether, and in which repeated punctures over the pubes were carried out for a week. At the end of this time, leeches to the perineum and the administration of ergot finally succeeded in restoring the calibre to the urethra, and enabling the patient to resume micturition by the natural efforts. The prostate in this case almost filled the pelvis, and the difficulty, owing to the length of the canal, which

[1] See page 676 of the Journal.

[2] This paper was read by title in the Section of Surgery and Anatomy, American Medical Association, June, 1889, by John D. S. Davis, Birmingham, Ala.

was tortuous and at the same time very stiff, owing to the length of the fibrous tissues around it, did not allow of a manipulation of the instruments past the obstructing projections.

He recalled, in order to complete the consideration of the subject, the procedure spoken of by Mr. Harrison, of plunging the trocar directly through the perineum, through the prostate and into the bladder, leaving the canula in place for perineal drainage. Mr. Harrison used this in one case in which a very great shrinkage of the prostate afterwards occurred, and in which the proceeding was followed by great relief to the patient.

DR. CABOT said he would like to ask Dr. Watson if in his case the retention was chronic, or possibly rather acute. The recovery of the bladder after emptying rather suggests that it was a case of acute rather than an old chronic retention.

DR. FIFIELD: I think Mr. Harrison has abandoned his operation of puncturing through the perineum by means of a trocar and canula, and has substituted for that what he calls an incision on the floor of the prostate.

DR. RICHARDSON: I think aspiration of the bladder nowadays is a very safe operation indeed. Suprapubic aspirations in case of prostatic enlargement or old stricture, as compared with rectal puncture, is, I think, absolutely safe. In rectal puncture I think we have one of the most dangerous operations, owing to the fact, which is not realized, that the peritoneum often comes down so far that you would wound it. There is much more danger of wounding it by that operation than by the suprapubic. At the Carney Hospital, some ten years ago, I remember a man in whom we repeatedly punctured the bladder, with the curious fact that it enabled one to pass an instrument after a day or two. It seems to me a very rational procedure, and one in which there is but little or no danger.

DR. WATSON: In answer to Dr. Cabot's question, the case was one of undoubted chronic retention. That is the reason I mentioned the recovery of power of urination. We knew he had had overflow of the bladder for three weeks at any rate; and for three weeks after he came to the hospital nothing was done.

The suprapubic puncture is a very old procedure. As to its mortality, I had the same feeling about it as Dr. Cabot expresses. Out of ninety cases fifty died, in which Dittel made the puncture, for example; but those were not aspirations but punctures with retained canula. At the autopsies, death was seen to be frequently due to prevesical infiltration of urine, and often phlegmon and peritonitis. There is nothing novel in the idea of aspiration of the bladder, of course; but the idea of systematically carrying it out, and repeating it frequently, with the definite intention of slowly emptying the bladder previous to using the catheter is, so far as I know, but seldom practised, and it seems to me worth while to give it a more extended trial. The power of the bladder to empty itself after this is, as Dr. Richardson remarks, a very striking fact.

THE EASTERN OPIUM TRADE. — A Chinaman named Cheong Hong Chang has gone to London to try to influence public opinion on the evils of the opium trade. He is said to be well educated and to speak English fluently.

Recent Literature.

A Manual and Atlas of Medical Ophthalmoscopy. By W. R. GOWERS, M.D., F.R.S., etc. Third edition, revised throughout, with numerous additions and additional illustrations. Edited with the assistance of MARCUS GUNN, M.D., F.R.C.S., etc. One volume, pp. 330. Philadelphia: P. Blakiston, Son & Co. 1890.

The new edition of this best-known work of its class is very welcome, not only showing the appreciation of the medical world of the untiring labors and accuracy of observation of its distinguished author, but also because the book has been so made over as to be an exposition of its author's later and wider experience. The cases that were described in full in previous editions have served their purpose and brief epitomies have therefore been substituted. The methods of scientific observation and recording of cases with the ophthalmoscope are laid down with care. It is a book that every practitioner of medicine who can use the ophthalmoscope should have at hand.

Diseases of the Eye. By EDWARD NETTLESHIP, F.R.C.S., Ophthalmic Surgeon to St. Thomas Hospital, etc. Fourth American, from the fifth English edition. With a chapter on the examination for color-blindness by WM. THOMPSON, M.D., Professor of Ophthalmology in the Jefferson Medical College. One volume, pp. 508. Philadelphia: Lea Brothers & Co. 1890.

This little manual for students has been reviewed in these columns three times before, and, therefore, there is no need for extended comment; the book still has the faults pointed out in previous reviews. It is a most excellent little hand-book, for the purpose for which, we presume, it was intended, namely, to enable the student to pass his examination.

Indigestion: A Manual of the Diagnosis and Modern Treatment of the Different Varieties of Dyspepsia. By GEORGE HERSCHEL, M.D., London. London: Baillière, Tindall & Cox. 1892.

The author has undertaken to present in a form sufficiently concise and methodical to meet the requirements of students and practitioners of medicine, a *résumé* of the more important points in the diagnosis and treatment of indigestion. He has availed himself of recent information scattered through medical journals and isolated monographs.

He has attained his object in a handy and practical duodecimo of 180 pages, to which a good index and a quite full bibliography add value.

The Physician's Visiting List (Lindsay and Blakiston's) *for* 1892. Philadelphia: P. Blakiston, Son & Co.

This popular visiting list is so well known that it is unnecessary to describe it in detail. As usual it appears in four sizes, the smallest for twenty-five, the largest for one hundred patients a week; it may also be had in two volumes, one for each half year. A good dose table, and other tables needed by a physician, are condensed into thirty pages, adding to the convenience of the book, but not making it at all unwieldy in size to carry in the pocket. Besides the blank pages for the daily record of visits, are pages for memoranda, addresses, cash account, and the like.

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AMŒBIC DYSENTERY.

It has been known for some time to those aware of the work being done at the Johns Hopkins Hospital, that Drs. Councilman and Lafleur were deeply busied in the prolonged and comprehensive investigation of a large number of cases of dysentery, in which the amœba coli, or, as they prefer it, amœba dysenteriæ, had been found.

Despite the considerable periodical literature of this subject, the text-books give little or no information, and the physician seeks in vain for a satisfactory statement of the symptomatology and pathological anatomy of that variety of dysentery connected with the presence of amœbæ coli. How important their recognition may become in prevention, prognosis and treatment, is fully and clearly set forth in the work now under consideration.

The authors maintain that amœbic dysentery is a distinct disease, caused by amœbæ which enter the body, and produce characteristic lesions of the intestine. They may also produce abscesses of the liver, with or without lesions of the lung. Such abscesses differ in their characteristics from those occurring in other forms of dysentery. Amœbic dysentery thus differs etiologically, anatomically and clinically from other varieties of dysentery.

These claims are based upon the study of fifteen cases, twelve of which were endemic, observed between February, 1890, and September, 1891.

Dr. Lafleur, to whom we are indebted for the clinical part of the paper, found the onset of this disease to be variable, its course irregular, with frequent exacerbations and intermissions, but tending towards chronicity. Tenesmus was infrequent. The stools contained a bloody mucus but differed in physical characteristics from those seen in other kinds of dysentery. In chronic cases with a fairly good appetite and digestion, a grave anæmia might exist, without the escape of blood from the rectum, owing to the destruction of red blood-corpuscles by the amœbæ. The prognosis is always uncertain; death may take place at any period in the course of the disease, and recovery is always gradual. Abscess of the liver was a complication in four cases, hepato-pulmonary abscess in four, peritonitis in two, once with and once without, perforation.

The essential feature in the diagnosis is the detection of actively moving amœbæ in the stools, sputum or aspirated contents of an hepatic abscess.

So complete a clinical picture as that elaborated by Dr. Lafleur has not been hitherto given, and Dr. Councilman deserves the credit of being the first to give a comprehensive and careful study of the lesions to be found in this disease. He may be said to have discovered where the amœbæ enter the tissues, their course through the body, and the mischief they produce. His investigations and discoveries compare well with those of Ponfick and Israel in actinomycosis.

From his anatomical studies he concludes that the amœbæ in food or drink reach the large intestine where they find favorable conditions for their increase. They multiply rapidly, produce a superficial necrosis, a softening of epithelium and an increased flow of mucus. They penetrate the mucous membrane, usually between the glands and pass into the submucous tissue where they produce an œdematous swelling with softening. The overlying tissue deprived of its blood-supply, dies, and the ulcerative process is thus begun. The ulcers increase by a progressive, undermining process, though their typical course and appearance may be modified by the action of associated bacteria. In certain places the amœbæ pass through the muscular coat and produce changes in the intermuscular tissue like those in the submucous layer. These lesions thus correspond rather with those generally described under the term follicular dysentery than with those included under the catarrhal and diphtheritic varieties.

Dr. Councilman thinks the amœbæ usually invade the liver by crossing the peritoneal cavity, although they may be found in lymphatics and in blood-vessels. He bases this view upon the absence of amœbæ in the lymph-glands and the usual limitation of the abscess to the upper or lower surface of the right lobe of the liver, whereas, abscesses from portal embolism should be found in either lobe, deep-seated as well as superficial. The latter event occurred in one case where an amœbic embolism of the portal vessels may have caused the multiple, hepatic abscesses. It is also possible that the amœbæ may enter the liver through the bile-ducts.

The abscess in the lung is usually found in one place, in the lower lobe of the right lung, where it is in contact with the diaphragm. It is considered to frequently arise from the direct extension of the hepatic abscess through the diaphragm, although an amœbic abscess may be present in the lung and the diaphragm be intact. Since the amœbic abscesses are limited to the intestine, liver and lung, a pulmonary abscess with an intact diaphragm would suggest the direct passage of the amœbæ through this septum.

The amœbæ seem to act upon the tissues differently from bacteria. Their typical effect is best seen in the liver where they appear to produce a necrosis of the tissue and a solution of the intercellular substance. The so-called abscess is thus made up of detritus not of pus-corpuscles. The association of the above-mentioned symptoms and lesions, meets with an important confirmation. The Army Medical Museum contains a number of specimens from cases of dysentery occurring during the war. An examination of these showed that those which presented the lesions characteristic of the presence of amœbæ came from patients whose symptoms corresponded with those observed by Lafleur in amœbic dysentery.

When one reads this interesting publication and sees the numerous and characteristic illustrations, one cannot but share in the enthusiasm which pervades every page of this important contribution.

Dr. Councilman's picture of the wanderings of these amœbæ is as graphic as if he were seeing them move from place to place in the body as he has watched their migrations on the hot stage. To us his anatomical facts are more convincing than the injections of Kartulis. The pure cultures of the amœbæ obtained by the latter are stated to have produced dysentery in cats, but Councilman finds every stopping-place in their journey through man from the surface of the colon to the interior of the spit-cup.

A word may be added of congratulation to the hospital on its good fortune in being able to furnish so important a contribution to medicine, and of thanks for presenting the work of its physicians in so satisfactory a manner.[1]

SHALL PHYSICIANS DISPENSE THEIR OWN MEDICINES?

IN the earlier ages of civilization (a custom prevalent in many country places even to-day), the physician was pharmacist and druggist as well as doctor. He collected his herbs and made his blue mass and his infusions and his peristaltic pills.

Later on, the pharmacist was evolved, and the retail druggist by a further differentiation. The manufacturing pharmacist has become a necessity, obtaining from all parts of the world the drugs which the physician needs, and preparing them in all suitable forms for the latter's use, so that half the details of the materia medica become useless lumber to him; the retail druggist, if not so much a necessity, has been to such an extent a convenience and a help that more than once in medical societies, attempts have been made (as lately in Cincinnati), to make it obligatory on physicians always to prescribe, and never to dispense their medicines.

There are advantages in this system, and there are evils. It is an advantage to the physician to be delivered from the drudgery to which he would be subjected were he obliged to be his own apothecary. At the same time, this drudgery is reduced to its minimum now that the day of compressed tablets has arrived. The prevailing system is doubtless sometimes a disadvantage to the patient, especially if his circumstances oblige him to be economical; he groans over a large apothecary bill, and perhaps asks if the next time he had not better employ a class of physicians who furnish their own drugs. It is doubtless true that the physician, were he to furnish his medicines, could be able to effect for his patient a great saving. This has been rendered quite possible and practicable by the manufacture and use of the pharmaceutical preparations known as tablet triturates, or compressed tablets. One of the arguments in favor of the tablet triturate is its cheapness. The pharmacist has an interest in selling these tablets at a very low rate, and by this means obtaining the trade of physicians rather than of druggists. The representative of the manufacturing house at stated periods visits all the physicians in a given locality with his samples, and for a few dollars paid on receipt of the goods, each medical man is furnished with quite an outfit of the drugs which he most uses in his practice, in a form very handy for administration..

There is a satisfaction, physicians say who now rely on the triturates and seldom write prescriptions, in being able to dispense at the bedside, and in a safe and convenient form and stated dose, the medicines indicated. Less medicine certainly will be used, though more visits may be made, as the physician (who has also a motive for economy) will leave, on making his morning visit, just the medicine for the day. Under the apothecary *régime*, bottles of unused medicine were likely to accumulate in the sick chamber, as "indications" changed.

Many physicians in large practice say that the tablet triturate and compressed tablet have "come to stay," and that it gives much better satisfaction to their office patients as well as the clientèle which they visit every day, to give them their medicine instead of a prescription, which latter must be subsequently compounded by the apothecary with more or less of delay entailed, and the exaction of another fee.

Another advantage attending the new method (or rather the revived primitive method) has been emphasized by a contemporary recently: the accidents of prescription writing and prescription filling are lessened. Mistakes have been too often made by the carelessness of the physician or the illegibility of the prescription, and by the carelessness and ignorance of the druggist. We are not sure, however, to what extent further experience will show the liability to accidents to have been diminished. The white tablets may very easily be mistaken for each other by doctor or patient, and it is very possible that morphia for instance, may be given or taken in this way for calomel.

Whether the increasing popularity of the tablet is destined largely to work against the interest of the

[1] Amœbic Dysentery. By William T. Councilman, M.D., and Henri A. Lafleur, M.D. The Johns Hopkins Hospital Reports, 1891, vol. ii, Nos. 7, 8, 9, pp. 126, Pl. i-vii.

retail druggist, whose shelves are already heavily weighted with the new preparations — some salable and some very unsalable — which he must "carry" in order to keep up with the times, it is impossible to say; nor do we yet know whether drugs will maintain their active therapeutic properties as well in the compressed tablet as in the well-coated pill-form. It is quite probable that the active principle of many drugs will deteriorate more or less in the tablet form, especially if exposed to the air.

There is a real objection to the employment of compressed tablets which is applicable to the employment of all medicines in the solid form, that is, absorption is not so certain nor so speedy when the drug is given in the solid as when it is given in the liquid state. Certainly, some medicines like quinine and salicylic acid are much more likely to have the desired therapeutic action if given in solution. It would, in fact, not be good practice in a severe case of intermittent to administer in pill or tablet form sufficient quinine to control the ague on account of the danger of provoking severe gastric irritation. Opium, especially, will often disappoint if given in pill or tablet form. At the same time the objection above made can be in large measure obviated by pulverizing the tablet before administration, and giving it in some menstruum in which it is soluble.

Another more serious objection has been raised in a leading article in the *Therapeutic Gazette*. Already the competition between manufacturing houses is great; the physician has an interest in buying his stock of drugs where he can buy them at the lowest price and there is a temptation to the pharmacist to fraud in the quality of his drugs, and an incentive to *short weight*. Hence the element of unreliability is introduced. But this objection is equally applicable to the dispensing of drugs by the retail apothecary. Changes have been known to occur in the putting up of prescriptions, when, for instance, strychnine has been substituted for quinine (because cheaper), and an important ingredient of the prescription has been left out because the druggist did not happen to have it in stock?

The "moral" plainly is this, that the physician in buying or prescribing his drugs must trust only such pharmacists as are of tried integrity and honesty.

Another objection to the dispensing of drugs by physicians is thus stated: "Where the cost of the prescription is borne by the patient, the physician will order the remedy which is most exactly indicated in the case without considering, in the majority of cases the cost; but where he himself has a temptation to look for a profit in the sale of his medicines, he will be tempted to prescribe the remedy which will yield him the largest profit."

Here, again, the element of honesty comes in, and we can well conceive that between dishonest physicians and dishonest apothecaries the patient would be in a sorry plight. The contingency above hinted at is, we believe, more imaginary than real. It is the glory of the medical profession that it is not characteristically a *mercenary* profession, and that physicians can generally be relied on conscientiously and honestly to do their duty, and give the right thing at the right time, whether it yields them the "largest profit" or not.

MEDICAL NOTES.

Measles at Quarantine.— The British Steamer *Lake Ontario* from Liverpool, arrived at Boston last week, with one hundred and one steerage passengers. Six families, including twenty-nine persons, were landed at Gallop's Island, eleven of them having the measles.

Tuberculosis in Massachusetts Cattle. — It is reported that the Maine Cattle commissioners have discovered tuberculosis in cattle lately imported from Massachusetts, and have voted to prohibit the importation of cattle from that State.

Influenza.— During the past fortnight epidemic influenza appears to have extended to a considerable extent, both in Europe and in this country. Reports in the daily press are often untrustworthy. The best evidence of the existence of the epidemic is often an increased death-rate, especially from pulmonary diseases. Most of the larger cities, as well as many smaller towns in the United States, appear to be afflicted to a greater or less extent. In Boston the death-rate for last week rose to twenty-six per thousand, a lower rate than is reported from several cities in Great Britain and the continent of Europe. An increase in the severity of the epidemic is reported from Germany, Russia and Austria. In Vienna several members of the royal family were attacked, three of whom have died. In New York, one hundred and forty-two members of the police force are on the sick list.

Statistics of Influenza.— The following appeal has been issued by Professor Leyden and Dr. Guttmann, from Berlin, to the whole medical profession: "The report of the committee appointed by the Society for Internal Medicine to collect information concerning the influenza pandemic of 1889–90 is already in the printer's hands, and will be published very soon. As a new influenza epidemic is raging in various districts with great virulence, and it seems desirable to supplement the report with information regarding the time and place of its appearance, the character of the present epidemic, its duration, etc., our professional brethren are urgently requested to support the endeavors of the committee to the best of their ability, by sending us short communications on these points."

Anti-Vivisectionists.— The Society for the Protection of Animals from Vivisection, in London, having failed in their efforts to prevent the incorporation of the British Institute of Preventive Medicine, have memorialized the Home Secretary to refuse a vivisection license "next year and in all future years." The memorial has 46,315 signatures, among whom are

fifty medical men, twenty-six peers, twenty peeresses, and fourteen bishops.

A NATIONAL DEPARTMENT OF PUBLIC HEALTH. — Senator Sherman has introduced a bill in the senate providing for the establishment of a department of public health under the charge of a medical officer, to be appointed from civil life by the President. This department shall obtain from consular officers at foreign ports all available information in regard to the sanitary conditions of such ports and places, and also all information accessible from State and municipal authorities of the sanitary condition of places in the United States. All the information gathered is to be embodied in the form of a bulletin, and transmitted weekly to the marine-hospital service, collectors of customs, and to State and municipal health officers. The department shall also procure and tabulate statistics relating to marriages, births, deaths, the existence of epidemic diseases, and all information relating to climatic and other conditions affecting public health. The department is to co-operate with State Boards of Health, the signal service, the medical department of the army, and other branches of the government, and utilize the results so as to make the new department a repository of public sanitary comfort.

THE POPULATION OF ALASKA, according to the recent census, is 31,795. Of these about four thousand are white, eighteen hundred mixed, twenty-three thousand Indian and two thousand Mongolian.

NEW YORK.

TENEMENT-HOUSES.—The Sanitary Superintendent has submitted to the Board of Health his report of the sanitary inspection of tenement-houses in the city for the year 1891. The inspections were completed in September. The report shows that there are 34,967 tenement-houses, and 2,391 rear tenement-houses, in which there dwell 276,505 families, comprising 1,225,411 persons, of which number 160,708 are children under five years of age. There are 4,297 stables in the city, in which are kept 62,208 horses. Of this number, 850 stables, containing 4,360 horses, are located adjacent to tenement-houses.

CRITICISM OF BELLEVUE HOSPITAL.— In the case of a patient who died at Bellevue Hospital on December 15th, of cerebral hæmorrhage, the coroner's jury, which found that the man came to his death as the result of an accidental fall, added the following caution to their verdict: "And we desire to call the attention of hospital authorities, and particularly the staff of Bellevue Hospital, to the fact that persons who meet with accidents should not be sent to the alcoholic wards, unless it is beyond question a case of alcoholism; and it should not be assumed that the patient brought in by an ambulance is under the influence of liquor unless intoxication is apparent and established by competent physicians; inasmuch as persons meeting with accidents are sometimes given stimulants to revive them or to sustain them while being taken to the hospital." In this instance, the patient fell down a pair of stairs, and on being taken to Bellevue Hospital, was placed in the alcoholic ward, though before death he was transferred to another ward. It was testified at the inquest that the man never drank.

THE BRAIN OF THE BOMB-THROWER.— The report of the examination of the brain of Norcross, the bomb-thrower, has recently been given out. The weight of the entire brain was found to be 1,210 grammes, about 100 grammes below the average, while that of the cerebellum was 154 grammes, or slightly above the average. After describing certain pathological appearances which were evidently of recent origin and due to the explosion, the report states that the left ascending parietal convolution, especially in its upper half, and the left first temporal convolution, especially in its anterior half, were greatly atrophied. The gray matter of the left ascending parietal convolution, was five millimetres in depth, and that of the left first temporal, four millimetres, while the gray matter of the first ascending frontal convolution was ten millimetres in depth, and that of the other convolutions varied from ten to seven millimetres. The left crus cerebri was four millimetres smaller than the right, and the left half of the pons was four millimetres smaller than the right. These abnormalities were all that were visible to the naked eye, but the opinion was expressed that they pointed towards insanity. The microscopical examination will be made after the brain has undergone the necessary hardening.

Miscellany.

A SURGEON CANNOT BE SUED AS SERVANT AFTER THE ACQUITTAL OF THE HOSPITAL AS MASTER.

JUDGE O'BRIEN in the New York Supreme Court Circuit lately dismissed the complaint in the suit of Windsor C. Hart against Dr. William T. Bull, to recover damages for malpractice. In 1884 Mr. Hart was operated upon by Dr. Bull at the New York Hospital. Hart claimed that the operation was not performed skilfully, and brought a suit against the New York Hospital, which was tried at Poughkeepsie in 1885, before Judge Barnard and a jury. The only question submitted to the jury on that trial was whether Dr. Bull performed the operation skilfully or not. The verdict on this issue of fact was for the hospital, and so, when the suit against Dr. Bull came to trial again, his counsel put in evidence the verdict and judgment of the former trial as a bar to recovery in the second suit. It was objected by the plaintiff that the parties to the two actions were not the same.

On the other hand, the position of the defendant was that, as the plaintiff elected to sue the Society of the New York Hospital on the ground that, as master, it was liable for the act of the defendant, its servant, and had had his day in court and secured a ruling that he (the plaintiff) was entitled to a verdict in that action for any negligence of Dr. Bull, he could not have another trial of the same issue by merely changing

defendants and suing the servant, after a jury had once decided against him on the merits of the question.

Judge O'Brien sustained the position of Dr. Bull's counsel, ruling that, upon the facts as they are now presented, the motion made by counsel for the defendant for a direction of a verdict in his favor should be granted. The action was originally brought against the New York Hospital for the alleged negligence of one of its doctors. The question then at issue was fairly and fully presented during the trial of the case as to the negligence of the doctor, and upon that there has been an adjudication in favor of the hospital.

Upon every principle, it is in the interest of justice, and in accordance with public policy, that after a man has had his day in court, and has been granted and accorded every opportunity of fully and fairly presenting his case, and after he has made his election and tried his case, that he should not be allowed to come in court and try the same question over again.

Concededly, the liability of the hospital in that case, if it was a liability at all, was a derivative one, being a legal liability resulting from the fact that it had connected with this hospital this doctor, the defendant in this case, no matter on what theory, whether upon the doctrine of election, or whether privy or party to the act or not.

This ruling, which seems in accordance with equity, and is in accordance with precedents in Maine and Rhode Island, saved the defendant an expensive trial.

TREATMENT OF ACUTE CORYZA.

Now that the damp, chilly season has arrived when colds in the head are very prevalent, it is well to recall some of the favorite prescriptions for this complaint.

Capitan, in *Médecine Moderne*, No. 46, 1891, recommends the following powder, which, he says, arrests generally, almost immediately, a commencing coryza, if from the very onset the patient takes pains to snuff up a pinch into each nostril and draw it in deeply:

℞ Salol . . . . . 1 gramme.
Salicylic acid . . . . 20 centigrammes.
Tannin . . . . . 10 centigrammes.
Powdered boric acid . . 4 grammes. M.

Take a pinch every hour for half a day, and then discontinue the use of this snuff, for if it be persevered with, it may cause an eczematous eruption on the margins of the nostrils from the action of the phenic acid resulting from decomposition of the salol.

Another snuff-powder by the same writer is recommended as being similar in its action to the preceding, but less powerful:

℞ Powder of talc . . . . 5 grammes.
Antipyrine . . . . . 1 gramme.
Pulv. boracic acid. . . . 2 grammes.
Salicylic acid . . . . 25 centigrammes. M.

This powder may be snuffed up the nostrils without fear of irritation.

M. Tessier, in the *Annales de Médecine*, indicates several formulæ for the treatment of this affection. The following is a mixture for inhalation:

℞ Acid carbolic fort. . . . 5 grammes.
Liquor ammon. fort . . . 5 grammes.
Water . . . . . 15 grammes.
Alcohol . . . . . 15 grammes. M.

Pour a few drops on blotting paper and inhale a few seconds. In some cases, chloroform or tincture of camphor may be advantageously substituted for the water in the above.

Dobson, in the *Lancet*, May 31, 1884, advises respiration of camphor coarsely powdered and placed in a jug of boiling water as an effective remedy against coryza. "About one drachm of camphor should be added to half a pint of fluid and the steam thus impregnated should be inhaled slowly ten minutes every hour, repeating it three or four times, when the nasal inflammation will be much relieved. The jug containing the water as well as the face of the patient must be surrounded with a paper cone during the period of inhalation."

The following formulæ is recommended by Dr. Beverley Robinson:

℞ Pulv. fol. belladonnæ . . . . ℈ i.
Pulv. morph. sulph. . . . . gr. ij.
Pulv. gum acacia, ad. . . . . ʒ ss. M.
Sig. Use with the powder-blower for anterior and posterior nares.

This powder should be blown through the nose both anteriorly and posteriorly so as to coat over the mucous membrane lining the nasal passages very thoroughly. "Its most noticeable action is to diminish the congested condition of the interior of the nose, so as to permit freer passage of the inspired and expired current of air. This it does, doubtless, by contracting the small blood-vessels and lessening the amount of watery fluid which exudes from them into the cellular structure. Besides all three agents, morphia, belladonna and gum, are decidedly antiphlogistic in their action upon the inflamed pituitary."

Dr. Morell Mackenzie advises the following snuff, which is to be used from the commencement of the cold, but never longer than twenty-four hours.

℞ Morph. sulph. . . . 12 centigrammes.
Subnitrate of bismuth . . 3 gr. 50. M.

To conclude: A person who is conscious of having taking a cold in the head, should take his room and resort for relief to some one of the measures of local treatment above given. For internal medication we do not think that much confidence is to be placed in the small doses of atrophine or the large doses of quinine advised by some authorities. If there be a furred tongue and a deranged state of the *primæ viæ*, a saline laxative, a full dose of rhubarb and soda, or even a cholagogue cathartic may be indicated. Hourly doses (one drop) of tincture of aconite may be given, or two or three five-grain doses of acetanilid two hours apart, or two ten-grain doses of phenacetine at the same or a longer interval, if there be considerable fever and headache. It is worse than useless to take any other nourishment than a little hot liquid food till the acute symptoms have somewhat subsided. General diaphoresis will seldom be advisable for a simple coryza. Dover's powder is apt to disturb the stomach and constipate, and can seldom be required. Antimonials: jaborandi and pilocarpine are not to be thought of. A teaspoonful every two hours of aromatic spirits of ammonia, can do no harm; or two or three drops of the liquor morph. sulph. along with two and a half grains of ammonium carbonate every hour for six hours, and afterwards every hour and a half. According to Phillips, a few drops of the tincture of euphrasia officinalis (eye-bright) taken at the beginning of the attack of acute coryza and repeated every two or three hours, will often abort it, and this treatment is endorsed by Dr. G. M. Garland in a former number of this JOURNAL.

THERAPEUTIC NOTES.

REMOVAL OF RUST FROM IRON. — This, in the case of small objects, can be effected with surprising facility, according to the *Eisen Zeitung*, by wrapping a piece of beeswax in a cloth which is not too thick, and rubbing it over the iron surface, after the latter has been warmed. This will give it a thin coating of wax, which must then be rubbed off with another cloth, dipped in finely powdered salt.

CHOLAGOGUE POWDERS. — In the *Revue Général de Clinique et de Thérapeutique* the following treatment for the relief of hepatic lithiasis is given.

℞ Benzoate of sodium, Salicylate of sodium, ā ā . . . āā gr. lxxv.
Powdered nux vomica . . . . . gr. vij. M.

Sig. This is to be divided into twenty powders. One powder three times a day for two months.

IODIDE OF POTASSIUM IN ANGINA PECTORIS. — Dr. Lauder Brunton[1] in a paper on "Cardiac Pain and Angina Pectoris," after speaking of the value of nitrite of amyl, nitro-glycerine, nitrite of sodium, etc., as agents by which the blood pressure may be rapidly diminished and the attacks of angina relieved, states that "first and foremost, amongst the drugs that are really efficient in tending to prevent the recurrence of the attacks in angina, comes iodide of potassium in doses of five to thirty grains three times a day."

Correspondence.

THE CAUSE OF THE ERRATIC COURSE OF SOME BULLETS.

STERLING, COLO., December 10, 1891.

MR. EDITOR:— The case of pistol wound of the head reported by Dr. E. H. Bradford in the JOURNAL of December 3, 1891, shows how strangely a bullet may act under some circumstances. It is possible that the following remarks may throw some light on the matter.

With a rifle of heavy calibre and a comparatively large charge of powder, the ball is impelled with such force that it pierces even tolerably firm wood without material deviation from its path. I have, with a rifle of .40 calibre, and using seventy grains of powder, shot through a standing spruce tree of fourteen inches diameter without stopping the "scream" of the ball, and leaving an absolutely straight track. It is needless to say that nothing in the human frame could do much toward causing a ball of such momentum to deviate from its course. On the other hand, I have twice known a ball fired from a weapon of the same calibre, and using sixty grains of powder, to be found in the body of a willow-grouse, a fowl about the size of a small hen. Let us see why the results should be so disproportionate.

In order to do fairly accurate shooting, it is necessary to have a well-made weapon, thoroughly clean and properly loaded. Almost all the anomalous cases we meet with in shooting are due to some deficiency in one of these conditions. Let us first consider the weapon.

The country is flooded with cheap guns and revolvers. For anything like accurate shooting these poorly-made arms are utterly worthless. The material is of the poorest quality, and the workmanship is poorer yet, so that most of the gas generated by the burning of the powder is lost by leakage about the defective joints. It should be borne in mind in this connection, that the better quality of guns are warranted air-tight at the joints, to insure the retention of all the gas and consequently hard and accurate shooting. Then the interior polish, if there be any, is so poor that the barrel cannot be kept clean, and without this it is not possible to have accuracy, for the effect of the rifling is lost. The object of this rifling is, of course, to keep the ball in rotation so that its longitudinal axis may not change, for, if it does not rotate in this way, the long ball commonly used tends to revolve around a transverse axis, and it then loses its accuracy and force. After the ball loses its velocity, contact with any obstacle which deviates it from its path produces a similar result.

So delicate a matter is this rifling, that it is well known to sportsmen that a very little dirt in the muzzle will ruin the accuracy of a gun. I once tried a new Winchester rifle, and found that I was unable, with a rest, to strike a two-foot circle at forty feet distance. Examining it, I found a spot of rust the size of a pin-head so near the muzzle that in cleaning the weapon I had overlooked it. Removing this, it did excellent shooting. Even an apple-seed, moistened with saliva and surreptitiously placed just inside the muzzle of a rifle has caused a good shot to lose a match.

I once used some cartridges loaded with powder so foul that after firing the gun four or five times it became so filled up in the "rifles" that the ball would strike sidewise at a distance of thirty feet, so that it was necessary to clean it after every shot while using those cartridges. The effect of the rifling was entirely lost, and the long ball revolved around a transverse axis. I once had a "bull-dog" revolver that, after two or three shots, would throw the ball as often sidewise as endwise. The same cartridge, when fired from a Colt or Smith & Wesson revolver had much greater penetration, because of the closer confinement of the gas and the better rifling.

Next, as to the ammunition. It should be remembered that gunpowder is not a true explosive, but simply a substance which burns with extraordinary rapidity. If a weapon be loaded with powder too fine or too coarse, the shooting will be poor. If, in a heavy rifle, one should use powder as fine as that used in the small pistols, he would do very uncertain shooting, even at fifty yards, while the recoil would be excessive. The powder would burn with such rapidity in this case that the ball would scarcely have time to fairly start before the combustion would be completed. The gas would not act on the ball, as it should do to insure theoretically perfect shooting, with increasing force as it approached the muzzle, but with diminishing force, much of the power being worse than wasted in the excessive recoil.

If, on the other hand, the powder be too coarse, it is not wholly burned before the ball leaves the muzzle, but is blown out unburned, and its force consequently wasted. These unburned grains may be easily demonstrated by shooting over clean snow.

Then, again, the muzzle may be so obstructed that the shooting becomes ineffective. If snow accidently obstructs the gun, and this is a very common accident, it is not simply pushed out by the advancing column of gas, but is compressed, and some part of the barrel commonly gives way. The force which should propel the ball is pretty well dissipated and the latter has no momentum, as it should have. The ball may also have a low initial velocity from dampness or other form of deterioration in the powder.

Once in a while we see reported cases in which a would-be suicide attempts his life by placing the muzzle of his weapon directly in contact with his person, and then firing. Even if the pistol be sufficiently well made to prevent the gas from finding exit around the joints, the ball may not even penetrate the skin. In a recently reported case of this nature, in which the man attempted to shoot himself in the abdomen, the ball dropped harmlessly to the floor. I once knew of a calf being shot by a trap-gun set for a bear, the ball barely penetrating the skin. The cause was probably the same as that in the case quoted.

If the gas escapes freely about the joints, but little penetration is secured under any circumstances. I have known of three instances in which the joints were so loose and the arm so foul that three or more bullets lodged in the barrel before the alleged sportsman using the weapon found out

[1] Practitioner, October.

why he could not see where he struck, the gas escaping completely at the breech.

In the case of the grouse mentioned, one of several causes may have operated to stop the bullet and cause it to remain in the bird's body. The powder may have been poor, the gun foul, the muzzle obstructed (although this would probably have destroyed the aim), or, most likely of all, the ball may have struck the ground before it did the bird, losing most of its force and becoming so flattened that it presented a greater surface and therefore was more easily stopped. The two latter causes in combination are the most probable ones.

When any of these causes lessen the velocity of the ball to such an extent that it has not sufficient force to go directly through whatever is before it, it will be more or less deflected from its course according to the nature of the obstruction. No bone in the human body could, by any possibility, deflect from its course the ball from the .40 calibre Winchester rifle if it were properly loaded, and yet we all constantly see cases in which the bullet from some ill-made revolver is completely turned from its track by a tendon or a rib. Every surgeon sees the curious cases where the ball follows up the tendons of the forearm or travels around the chest-wall. But he never sees them where a heavy rifle properly loaded is used, unless, indeed, it be from a spent ball, and such a possibility is to be borne in mind. I have known of several instances of a ball from a pistol following around the skull under the scalp when fired at close range, and yet, with the rifle mentioned, I cut a groove a third of an inch deep in the skull of a grizzly bear at nearly a quarter of a mile distance, and that when the ball impinged at an angle not greater than four or five degrees. Again, two months ago, I cared for a young man who accidentally shot himself in the back with a .45 calibre, government rifle, the ball striking the 11th rib at quite an acute angle. It was not apparently deflected from its course in the slightest, but, passing through the body, made so much noise in the air 500 yards away, as it passed over the house of a ranchman, that the latter thought some one was shooting at him. Upon investigating the matter, he found the injured man and cared for him.

In the case quoted by Dr. Bradford, we may conclude that probably one or more of the following causes operated to produce the unusual position of the ball, namely: Poor construction of the weapon; bad condition of it as regards cleanliness; excessive fineness or coarseness of the powder; dampness or other deterioration in its quality; obstruction of the muzzle, or the placing of it in contact with the skin.

In any case, the initial velocity and the momentum of the ball must have been very low, and it evidently was deflected by obstacles through which it should ordinarily pass without difficulty. In all probability, the first, second and possibly the last of the reasons mentioned were responsible for the strange action of the ball. After all has been said, however, I must admit that it would not have seemed possible for the bullet to have turned around in passing through so short a space.

Very truly yours.

J. N. HALL, M.D. (HARV.)

HOW LONG SHOULD A CONVALESCENT FROM DIPHTHERIA BE ISOLATED?

BOSTON, December 18, 1891.

MR. EDITOR:—*Apropos* of Dr. .S. W. Abbott's excellent paper lately published in the JOURNAL (November 26th and December 3d), allow me to cite the following case which came under my observation a few days ago. It shows the danger of diphtheria being disseminated by cases *supposed to have recovered from the disease and to be free from the poison*. Two children of a family living in South Framingham were taken sick with the disease. About two weeks later the father was attacked. All recovered, the children becoming well first. When the father was supposed to be well, about nine days from the date of his "sitting up," the family came to Boston to make a visit to a relative. In the family of the latter was one child. One week after the arrival of the visitors, the child was attacked with diphtheria and died. Inquiry elicited the fact that one of the visitors — the father — could not have been perfectly well; for his "voice was thick," so much so that his wife constantly asked him how his throat felt, during the first days of his visit.

I think there can be little doubt of the connection between these cases.

If my memory serves me rightly, an outbreak of diphtheria in a hotel at Nantucket, some years ago, followed the arrival of a person just recovered from diphtheria, and pronounced well by the attending physician. One of the persons who had the disease at Nantucket, when supposed to be well, removed to a hotel in a town not far from Boston. Shortly after arrival, many of the people in the hotel were attacked, and it was found necessary to close the hotel.

Before closing, and as illustrative of another mode of contagion, I may mention the remarkable coincidence (!) (with which I am painfully familiar) of the occurrence of three cases of diphtheria in a family, closely following the advent of a nurse who had just come from attendance on a fatal case. Of these three cases one died.

The determination of the time when danger from contagion after recovery is passed, is a practical question of great importance. I think that evidence goes to show that the poison is retained in the mucous membrane longer than is generally considered to be the case. In lieu of definite knowledge, I have adopted the arbitrary rule of advising quarantine precautions for one week after the patient appears to be perfectly free from disease. This seems to me a fairly safe rule and one that is desirable.

Yours truly, MORTON PRINCE, M.D.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 5, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from				
				Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	675	236	14.67	18.67	2.81	2.07	6.07
Chicago	1,099,850	460	200	21.30	15.43	3.04	6.74	6.30
Philadelphia	1,046,964	410	144	17.56	11.71	3.17	1.71	11.46
Brooklyn	806,343	353	108	12.18	18.69	1.70	1.13	5.38
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,477	201	61	5.97	19.90	—	2.49	3.48
Baltimore	434,439	170	67	15.88	14.71	1.76	4.12	5.88
Cincinnati	296,908	129	39	13.18	20.15	3.10	3.88	6.20
Cleveland	262,000	69	19	10.15	14.49	—	—	8.69
New Orleans	242,039	—	—	—	—	—	—	—
Pittsburg	240,000	73	25	10.96	15.07	—	1.37	9.59
Milwaukee	240,000	87	48	33.33	11.49	8.04	2.30	18.39
Washington	230,392	106	38	16.98	14.15	—	2.83	7.54
Nashville	76,168	34	8	11.76	14.70	—	—	—
Charleston	65,165	—	—	—	—	—	—	—
Portland	36,425	12	1	8.33	—	—	—	—
Worcester	84,655	32	12	18.75	21.87	3.13	—	3.13
Lowell	77,696	34	12	—	8.82	—	—	—
Fall River	74,398	16	5	12.50	18.75	—	6.25	6.25
Cambridge	70,028	18	3	5.55	11.11	5.55	—	—
Lynn	58,727	—	—	—	—	—	—	—
Lawrence	44,654	18	6	16.67	16.67	—	5.55	5.55
Springfield	44,179	20	4	15.00	20.00	5.00	—	—
New Bedford	40,733	18	7	11.11	—	5.55	5.55	—
Salem	30,801	16	2	—	10.00	—	—	—
Chelsea	27,909	13	6	15.38	38.46	—	—	15.38
Haverhill	27,412	10	2	10.00	—	—	10.00	—
Taunton	25,445	9	3	—	11.11	—	—	—
Gloucester	24,651	9	4	33.33	22.22	—	—	—
Newton	24,379	9	3	33.33	22.22	—	—	22.22
Malden	23,031	6	1	—	33.33	—	—	—
Fitchburg	22,037	10	0	10.00	20.00	—	—	—
Waltham	18,707	8	0	12.50	—	—	12.50	—
Pittsfield	17,281	6	1	—	66.67	—	—	—
Quincy	16,723	7	0	28.57	—	—	14.28	—
Newburyport	13,947	7	2	28.57	—	—	14.28	14.28
Medford	11,079	5	2	—	—	—	—	—
Clinton	10,424	2	0	—	—	—	—	—
Hyde Park	10,193	—	—	—	—	—	—	—
Peabody	10,158	2	0	—	—	—	—	—

Deaths reported 3048: under five years of age, 1069; principal infectious diseases (small-pox, measles, diphtheria and croup,

diarrhœal diseases, whooping-cough, erysipelas and fevers) 467, acute lung diseases 494, consumption 365, diphtheria and croup 206, typhoid fever 86, scarlet fever 70, diarrhœal diseases 38, cerebro-spinal meningitis 19, measles 14, puerperal diseases 11, malarial fever 8, whooping-cough 8, erysipelas 7.

From diarrhœal diseases Chicago 9, Brooklyn 6, New York, Philadelphia and Washington 4 each, Baltimore, Milwaukee, Nashville and Worcester 2 each, Portland, Lawrence and Newton 1 each. From cerebro-spinal meningitis New York 4, Chicago, Baltimore and Gloucester 3 each, Washington and Worcester 2 each, Fitchburgh and Quincy 1 each. From measles New York and Chicago 6 each, Brooklyn and Baltimore 1 each. From puerperal diseases New York 6, Chicago 2, Philadelphia, Milwaukee and Springfield 1 each. From whooping-cough Chicago 3, Nashville 2, New York, Milwaukee and Springfield 1 each. From malarial fever Brooklyn 5, New York, Baltimore and Cleveland 1 each. From erysipelas New York 3, Brooklyn 2, Chicago and Washington 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending November 28th, the death-rate was 20.5. Deaths reported 3,702: acute diseases of the respiratory organs (London) 414, whooping-cough 114, measles 96, fever 55, diarrhœa 47, diphtheria 41, scarlet fever 37, small-pox (Birmingham) 1.

The death-rates ranged from 13.4 in Portsmouth to 38.3 in Plymouth, Birmingham 20.1, Bradford 16.8, Halifax 20.1, Hull 14.5, Leeds 18.6, Leicester 19.0, Liverpool 24.6, London 19.9, Manchester 21.8, Newcastle-on-Tyne 31.1, Nottingham 17.7, Salford 21.8, Sheffield 21.8.

In Edinburgh 35.4, Glasgow 30.9, Dublin 30.3.

METEOROLOGICAL RECORD,

For the week ending December 5, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer	Thermometer.			Relative humidity.		Direction of wind.		Velocity of wind.		We'th'r.*		Rainfall in Inches.
	Daily mean.	Daily mean.	Maximum.	Minimum.	8.00 A. M.	8.00 P. M.	Daily mean.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	8.00 A. M.	8.00 P. M.	
S...29	30.26	19	22	16	47	58	52	N.W.	N.W.	16	10	O.	O.	
M..30	30.26	18	28	9	75	55	65	N.W.	W.	13	12	C.	C.	
T.. 1	30.27	32	44	21	72	54	63	W.	S.W.	8	15	C.	C.	
W. 2	30.12	44	54	35	43	49	46	S.W.	W.	13	16	O.	C.	
T.. 3	30.28	50	58	41	62	81	72	W.	S.E.	12	6	F.	C.	
F.. 4	30.48	48	56	40	96	91	94	S.E.	S.E.	7	24	G.	R.	.02
S.. 5	30.00	48	54	41	62	56	59	S.W.	S.W.	17	22	C.	C.	.29
Mean	30.24	40	45	29	65	63	64			12	15			.22

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. Mean for week.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 12, 1891, TO DECEMBER 18, 1891.

By direction of the acting Secretary of War a board of medical officers to consist of COLONEL BERNARD J. D. IRWIN, surgeon; LIEUT.-COL. CHARLES H. ALDEN, surgeon; MAJOR ALFRED C. GIRARD, surgeon; FIRST-LIEUT. ALFRED E. BRADLEY, assistant surgeon, is constituted to meet at Headquarters Department of the Missouri, Chicago, Ill., on the 1st day of February, 1892, for the examination of candidates for admission to the Medical Corps of the Army, and for such other business as the surgeon-general may desire to bring before it.

By direction of the acting Secretary of War, so much of paragraph 1, S O. 265, A. G. O. November 13, 1891, as directs CAPTAIN EDGAR A. MEARNS, assistant surgeon, to report to the commanding officer, Fort Mackinac, Mich., is revoked; he will proceed to El Paso, Texas, and on arrival there report for duty to LIEUT.-COL. JOHN W. BARTON, Corps of Engineers, member of the commission appointed for the location and marking of the boundary between Mexico and the United States.

FIRST-LIEUT. PHILIP G. WALES, assistant surgeon, U. S. A., granted leave of absence for one month, with permission to apply for an extension of one month.

SOCIETY NOTICE.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. — A regular meeting of the Society will be held on Monday, December 28, 1891, at the Medical Library, 19 Boylston Place, at 8 o'clock P.M.

Dr. C. M. Green, "The Care of Pregnant and Puerperal Women."

Dr. G. G. Sears, "The Etiology of Acute Pleural Effusions."

Election of Committee to nominate officers for the ensuing year.

G. G. SEARS, M.D., *Secretary.*

RECENT DEATHS.

LUCIEN DAMAINVILLE, M.D., died in New York, December 15th, aged fifty-two. He graduated from the Long Island College Hospital in 1861, was for some time visiting physician to the French Hospital, and since 1887, has been one of the police surgeons of New York City.

EDWARD SAWYER, M.D. (Harv., 1863), M.M.S.S., died in Bridgewater, December 21st, aged fifty-three. He had been in Bridgewater since 1867, where he has held several public offices.

SAMUEL CURTIS ROBINSON, M.D. (Yale, 1855), of Brooklyn, N. Y., died December 22d, aged sixty-one.

ROSWELL P. COLLIN, M.D. (Coll. P. and S., N. Y., 1879), of New York City, died December 22d.

GIOVANNI SPANTIGATI, M.D., of Turin, Italy, died November 13th, aged fifty-five. He was "medico primario" of the hospital of San Giovanni. During the Franco-German War he became well-known in the medical department of the French Army, and received the highest honors from the French Government.

PIERRE BAILLARGEON, M.D. (Harvard, 1840), of Quebec, Senator in the Canadian Parliament, died December 15th, aged eighty-eight.

FRANZ CHRISTOPH VON ROTHMUND, M.D., formerly professor of surgery in the University of Munich, died early in December, aged ninety-two.

SIR JAMES RISDON BENNETT, M.D., formerly President of the Royal College of Physicians, London, died December 14th, aged eighty-two.

BOOKS AND PAMPHLETS RECEIVED.

Thirty-sixth Annual Announcement, Kentucky School of Medicine, Louisville. 1892.

Hypnotism versus Morphinism. By Wm. Lee Howard, M.D., Ky. Baltimore, Md. Reprint. 1891.

The Physician's Visiting List. Lindsay & Blakiston, for 1892. Philadelphia: P. Blakiston, Son & Co.

Station-List of Officers of the Medical Department and Hospital Stewards of the Hospital Corps, United States Army. 1891.

Studies from the Pathological Laboratory of the College of Physicians and Surgeons, Columbia College, New York. 1890-91.

On the Simulation of Hysteria by Organic Disease of the Nervous System. By Thomas Buzzard, M.D., F.R.C.P., London. London: J. & A. Churchill. 1891.

A. B. C. of the Swedish System of Educational Gymnastics. By Hartwig Nissen, Instructor in Physical Training in the Public Schools of Boston, etc. Philadelphia: F. A. Davis. 1891.

Lessons in the Diagnosis and Treatment of Eye Diseases. By Casey A. Wood, C.M., M.D., Microscopist and Pathologist to the Illinois Eye and Ear Infirmary. Detroit: George A. Davis. 1891.

Burdett's Hospital Annual and Year Book of Philanthropy, 1891-92. Being a guide to British and Colonial Hospitals and Charities. By Henry C. Burdett. London: The Hospital. Limited.

Deafness and Discharge from the Ear. The Modern Treatment for the Radical Cure of Deafness, Otorrhœa, Noises in the Head, Vertigo and Distress in the Ear. By Samuel Sexton, M.D., assisted by Alexander Duane, M.D. New York: J. H. Vail & Co. 1891.

Human Monstrosities. By Barton Cooke Hirst, M.D., Professor of Obstetrics in the University of Pennsylvania and George A. Piersol, M.D., Professor of Histology and Embryology in the University of Pennsylvania. Part I, illustrated. Philadelphia: Lea Brothers & Co. 1891.

A System of Practical Therapeutics. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, assisted by Walter Chrystie, M.D., Instructor in Physical Diagnosis in the University of Pennsylvania. Vol I. Philadelphia: Lea Brothers & Co. 1891.

Age of the Domestic Animals. Being a Complete Treatise on the Dentition and the Various other Means of Determining the Age of these Animals. By Rush Shippen Huidekoper, M.D., Professor of Sanitary Medicine and Veterinary Jurisprudence, American Veterinary College, New York, etc. Philadelphia: F. A. Davis. 1891.

Original Articles.

UNSUSPECTED HEART-DISEASE.[1]

BY HERMAN F. VICKERY, M.D.,
Instructor in Clinical Medicine, Harvard University; Physician to Out-Patients, Massachusetts General Hospital.

SIR ANDREW CLARK reported, before the British Medical Association, in 1887, 864 cases which he had seen during the years 1873 to 1886 inclusive, suffering from chronic valvular disease of the heart, "which was not indicated by symptoms, and had not sensibly interfered with the health."[2]

Every practitioner must have been struck with the occasional appearance among his patients of similar cases; and I venture to report some which have lately occurred to me, with the purpose, not so much of endeavoring to establish a fact already well known, as to enforce its practical bearing. In my cases the patient had no idea of any cardiac trouble, and indeed some of them were such that the physician would not be led by the rational signs to regard organic heart-disease as the most probable diagnosis.

CASE I. Mr. I. W. H., aged fifty-one, was a retired business man who used very strong tobacco to excess. He described himself as a "tobacco worm." This gentleman was fond of an out-door life, and in October, 1889, while making a "carry" in the woods with a rather heavy load upon his back, he experienced a sudden pain in the jaws, severe enough to make him stop, whereupon the pain ceased; but it recurred when he resumed his march. From that time to the time when I first saw him, seven months later, the pain was felt upon either excitement or exertion; and there had been added to it a palpitation of the heart. The double aortic lesion which was found upon examination had not, in any way, interfered with his pleasures or exertions until the time when this neuralgic pain first appeared.

CASE II. Mr. C. G., aged thirty-three, a contractor, experienced an accidental injury for which he was brought into the Massachusetts General Hospital, November, 1890, coming under the care of Dr. C. B. Porter, who kindly permits my mention of the case. Physical examination revealed, beside his surgical injuries, slight lateral enlargement of the heart, with a systolic apex murmur transmitted into the axilla, and a to-and-fro murmur in the second interspace on the left. In this case no symptoms had pointed to the heart. But for the accident, it is not probable that the patient would have come under medical observation.

CASE III. J. R., aged nineteen, fell down stairs and injured his right ankle ten days before he called upon me. He was confined to bed for nine days, but on arising he noticed trouble about the heart, having never had such symptoms before. He came to me supposing that the fall had caused heart-disease. On investigation, it was found there was no history of rheumatism or scarlet fever; but the patient had had small-pox when a child. The heart's apex was in the fifth space outside of the nipple. There was enlargement of the heart a finger's breadth to the right of the sternum, a presystolic thrill at the apex, a presystolic and systolic apex murmur, and a double murmur over the aortic region with a typical "crural tone" in the femoral artery, — a condition of things evidently chronic.

CASE IV. (Reported by the kind permission of Dr. F. C. Shattuck.) Mr. H., aged thirty-four, a gardener, complains of purpuric spots, and pain in the muscles of the legs. Otherwise he feels perfectly well and looks well, and his bodily functions are well performed. Examination, however, reveals a systolic thrill at the heart's apex, and a loud systolic murmur heard best in the fourth space on the left, but audible all over and even outside of the cardiac area. The pulmonic second sound is not accentuated, nor is the heart much enlarged. The murmur, which is somewhat rough in character, has persisted now for several months, and is in all probability due to mitral regurgitation well compensated.

CASE V. (Also reported by permission of Dr. F. C. Shattuck.) Herbert F., aged twenty-one, a farmer, had acute articular rheumatism four years ago; but, after recovery from that, he had done hard work and enjoyed excellent health until three days before entrance into the hospital with the symptoms of subacute rheumatism. Examination established clearly the existence of mitral regurgitation, referable not to the present, but to the first attack of rheumatism.

CASE VI. (Reported by the courtesy of Dr. H. C. Ernst.) D. O'G., aged twenty-six, teamster, comes to the out-patient department of the Massachusetts General Hospital, on account of an eruption of secondary syphilis. Although on questioning he states that he has some years previously undergone an attack of rheumatism which confined him to the bed, and for the last three or four months has had some dyspnœa on exertion, he maintains that the only symptoms which led him to seek advice are connected with his venereal trouble. Examination shows an enlarged heart with a distinct presystolic thrill and presystolic murmur at the apex and accentuation of the pulmonic second, — mitral stenosis.

CASE VII. (Reported also by permission of Dr. Ernst.) William D., aged twenty-six, a butcher, complains of "pain in the kidneys," great thirst, cramps and dull aching pain through the legs at night, excessive appetite, frequent micturition and loss of twenty-two pounds weight. On later inquiry he acknowledges that four years ago he had an attack of acute articular rheumatism lasting three months, but he has never noticed any cardiac symptoms. This patient was brought to the medical clinic at the hospital as a case of diabetes mellitus, and with good reason; but the prominent pulsation of the temporal arteries in so young a man (twenty-six years) called attention to the heart, which was found to be hypertrophied and affected by both aortic and mitral incompetence.

CASE VIII. N. S., aged seventeen, was in the Massachusetts General Hospital November 13 to December 29, 1890, with uræmia; and on examination he was found also to be suffering from mitral regurgitation. In May, 1891, and again in October, 1891, the patient returned for observation, and no complaint of cardiac symptoms could be elicited, although the objective evidence of the heart lesion was still present.

CASE IX. John D., aged twenty-two, a waiter, had rheumatic fever four years ago. The reason for his seeking advice, in May, 1891, I have forgotten; but I am confident that it was no direct cardiac symptom. He had been ailing only two weeks. On examination a double mitral lesion, with a thrill at the apex, and

[1] Read before the Section of Clinical Medicine, Pathology and Hygiene of the Suffolk District Medical Society, November 18, 1891.
[2] British Medical Journal, February, 1887.

an aortic regurgitation, were made out, and there were also moist râles above the right clavicle.

CASE X. William M., aged forty, complained that for one week he had experienced cough and pain in the chest. No other symptoms could be elicited. Examination disclosed moist râles in both bases behind, also a double aortic murmur and a systolic murmur at the apex transmitted into the axilla.

CASE XI. F. S., aged fifty-six, paper-hanger, has had a cough all winter, with little expectoration, and he also suffers from "sour stomach." The heart is irregular in action and the aortic valve is incompetent.

CASE XII. Daniel S., aged seventy-two, complains of being "sore all over" and "choked up in the chest." He coughs all night, with a mucous expectoration. Bread and tea are the chief diet. The pulse is irregular, feeble and intermittent. There is a faint systolic murmur at the apex, transmitted towards the axilla. Pulmonary œdema exists at the bases of both lungs.

Of these twelve patients, five had disease of both the aortic and mitral valves, four had mitral regurgitation, one had mitral stenosis, one had aortic regurgitation, and one had both stenosis and incompetence of the aortic valves. Of the 684 cases reported by Sir Andrew Clark, 41 per cent. had mitral regurgitation, 24+ per cent. had aortic stenosis, 14 per cent. had affections of both valves, 9 per cent. had mitral stenosis, 4½ per cent. aortic regurgitation, 3½ per cent. aortic obstruction and regurgitation, and 2½ per cent. mitral obstruction and regurgitation.

According to his experience, therefore, we might infer that mitral regurgitation is the least unfavorable valvular disease, and next to it aortic stenosis; but different authorities differ widely about this question. Fagge regards aortic stenosis as of the least relative importance, followed by mitral stenosis, next to which — but separated by a long interval — come mitral regurgitation and aortic regurgitation. Strümpell believes that aortic regurgitation generally gives the best prognosis, that mitral insufficiency is rather worse, and that worst of all are mitral stenosis and aortic stenosis.

If we search for an explanation of these apparent contradictions, we shall find it in the all-important fact that every case of heart-disease must be judged independently. The crucial test for the heart is its ability to carry on the circulation. Now it is easy to see that the size of the leak or the degree of the stenosis may vary between great extremes, that the development of compensatory hypertrophy may be ample in a young and robust individual of good habits, and next to nothing in an old and syphilitic drunkard, and that a stationary lesion which presents no changes in the course of one or more years, is less to be feared than one which is still progressive. The names mitral stenosis, aortic regurgitation, and the like, tell only a part of the truth, and that not the most important. Myocardial degeneration without a murmur is a worse thing than valvular lesion with adequate hypertrophy. And although I do not here present such a case, the determination of the state of the cardiac muscle demands even more vigilance in physical examination than the condition of the valves. It should be added perhaps, to avoid misunderstanding, that given a defect in the valves, the degree of cardiac hypertrophy is to some extent, a measure of the importance of that defect. If compensation is good, the less the hypertrophy the more favorable the case.

The twelve cases reported by me had this one thing in common: for a considerable period of time they had had heart-disease and yet had been entirely unconscious of the fact. Some of them, indeed, did not have symptoms suggesting heart-disease to a physician, thus affording a striking contrast to the sufferers from functional disorders who so frequently demand a physical examination and who are so slow to be convinced that their hearts are not organically diseased.

The ordinary rational signs of heart-disease may be briefly enumerated as follows: dyspnœa, palpitation, precardial distress, headache, vertigo, cough and indigestion. Of my cases, one, it will be remembered, confessed on questioning that he had suffered somewhat from dyspnœa, although he asserted that the trouble was very slight. With this exception none of the patients presented the rational symptoms just enumerated, except cough (which was present in three cases) and indigestion (which was present in one case).

Of Clarke's 684 cases, 402 had digestive symptoms, 35 had headache, 17 had vertigo, 23 had bronchitis and seven had pulmonary congestion; so that really 487 might be said to have presented symptoms suggesting the possibility of cardiac disease; but even then, the large number of 197 remain, the correct diagnosis and proper treatment of which hung upon the physical examination.

The lesson to be gained from these observations is the necessity of thoroughness in the physical examination of every patient, so far as practicable. There are those who regard it a mistake to inform a patient as yet undisturbed by cardiac symptoms that he is the victim of a cardiac disease. Bristowe, for example, speaking in this connection says, "I am sometimes inclined to think it is a pity there are physicians. Many persons would lead a happy life enough but for them. If a patient has a heart-trouble, he does not wish to learn the fact." My own view is that, under ordinary circumstances, the earlier such a discovery is made by the physician and communicated to the patient, the better. This affords a fair chance for averting cardiac failure. A sensible patient, properly advised as to his physical limitations, may be able to lead a long, happy and useful life, whereas unwarned he might soon collapse into hopeless invalidism.

A REPORT OF 392 CASES OF INTUBATION AND 139 CASES OF TRACHEOTOMY DONE AT THE BOSTON CITY HOSPITAL.[1]

BY W. H. PRESCOTT, M.D., AND JOEL E. GOLDTHWAIT, M.D., BOSTON.

INTUBATION for the relief of laryngeal obstruction in diphtheria was done at the Boston City Hospital, for the first time, on December 31, 1886, and from that time up to January 1, 1891, it has been done in 392 cases. During this time tracheotomy has been done 139 times; 82 of these being primary operations, 36 after intubation, and 21 after attempted intubation.

In the report of cases of tracheotomy made by Drs. Lovett and Munro,[2] were included all operations per-

[1] Read before the Surgical Section of the Suffolk District Medical Society, November 4, 1891.

[2] Lovett and Munro: American Journal Medical Sciences, July, 1887.

formed previous to January 1, 1887, while in this paper all operations (both intubations and tracheotomies) since that time are reported. During the first year after intubation was introduced at the hospital, it was done only occasionally, and on picked cases; while during 1890 it was practically the only operation, tracheotomy being reserved for exceptional cases or was done as a secondary operation.

The writers are indebted to the visiting surgeons for permission to report these cases.

INTUBATION.

The details of the operation will not be entered into in this paper; suffice it to say, that, while at first the operation was done with the patient in the sitting posture, at present it is done with the patient lying down with a small pillow under the neck. In this position the operation can be done more easily, and the child more easily held.

Of the 392 cases, 312 died and 80 recovered (20.41%); 36 cases were followed by tracheotomy, with three recoveries; there were 21 cases in which intubation was attempted, and where either the tube was not inserted or else the child did not breathe after insertion, so that tracheotomy was immediately performed, and these cases will be included in the report of the tracheotomies. Over ten per cent. of all the cases were moribund upon entrance to the hospital.

The age of the child has a very decided influence upon the chances of recovery, as in tracheotomy. This is shown in the following table:

Age.	Cases.	Recov.	Per cent.
Under 3 years	123	18	14.63
3-5 years	183	43	23.05
6-10 years	55	17	30.90
10 years and over . . .	10	2	20.00

The average age of the cases that recovered was four years and six months, of fatal cases three years and nine months, and of all three years and eleven months. One case was twenty-seven years old, three were seven months; all died.

The early operation, after the appearance of laryngeal symptoms, does not seem to have the same effect on the recoveries as in tracheotomy [1] for

In 210 cases operated upon the 1st day there were				42	recoveries.
60	"	" 2d day	"	15	"
22	"	" 3d day	"	10	"
10	"	" 4th-9th days	"	3	"
88	where the time could not be ascertained			10	"

Two were hoarse and croupy for two weeks before operation (both died). One was intubed four hours after the first symptoms, which were laryngeal. The average time of operation was thirty-six hours after the appearance of laryngeal symptoms.

The average length of time that the tube was worn in those that recovered was five days and eighteen hours; the average in the fatal cases was two days and three hours; while the longest time a tube was worn was twenty-three days. The age has a decided influence upon the length of time that a tube is required, the younger the child the longer it must be worn. This is shown in the following table:

Age.	Average time tube was worn.
1-2 years	9 days and 19 hours.
2-3 years	8 days and 6 hours.
3-4 years	5 days and 3 hours.
4-5 years	4 days and 14 hours.
5-6 years	4 days and 19 hours.

[1] Lovett and Munro: American Journal Medical Sciences, July, 1887.

There were too few of the other cases to make any averages.

Complications. — Eleven cases developed measles; five recovered. Three cases developed scarlatina; one recovered. Nephritis, as shown by albuminuria and casts, was a frequent complication, but the notes are not full upon this point.

Accidents. — Numerous accidents occurred; some unavoidable, some due to faulty instruments, some to lack of skill. In ten cases the tube was plugged with membrane; and in two spasm of the jaw occurred, making tracheotomy necessary. In three cases death occurred during the attempt to insert the tube; and two died during choking spells before relief could be given (in one case relief was obtained by the nurse holding the child up by its feet and slapping it on the back, forcing the tube out). Four stopped breathing after reinsertion of the tube (it having previously been worn with relief), and tracheotomy was done; in two the introducer broke (owing to a defect); in two, insertion of the tube caused convulsions; in two, the tube was drawn into the bronchi, and these cases are reported in detail:

Case I. Female, aged fifteen months, entered hospital, having been sick one week, and with laryngeal symptoms for six days. She was immediately intubed with a "two-year old" tube. Tube worn three days, and then coughed up; replaced in twenty minutes; coughed up again next day, and replaced immediately; worn two days, and again coughed up. A three to four year old tube was now passed, and worn five days; then removed and replaced. Soon after this the breathing suddenly became labored; and as the tube could not be felt in the larynx, tracheotomy was done (the intubation tube could not be felt in the trachea). A quiet night was spent, and in the morning the tube was felt in the left bronchus; it was removed after great difficulty; but the patient failed rapidly, and died quietly, probably from exhaustion.

Case II. Male, aged thirteen months. About seven weeks before entrance was suddenly taken with choking, and became cyanosed. Tracheotomy was done next day, and the symptoms relieved; several attempts were made to remove the tube, and all failed. With the laryngoscope the larynx could not be seen, owing apparently to paralysis of the epiglottis. One week after entrance there were several severe attacks of dyspnœa, which were relieved by passing a longer tube (tracheotomy). Twenty-three days after entrance an intubation tube was passed with some difficulty, owing to the flabby epiglottis; comfortable; fed by enemata for two days, and then by mouth. Six days after intubation (the child having been well and comfortable) several unsuccessful attempts were made to extract the tube; in about half an hour there was a severe attack of dyspnœa, and as the tube could not be felt in the larynx, tracheotomy was done. The tube could not be felt in the trachea. On examining the chest, the breathing on the right side was loud, high-pitched and tubular; on the left, the entrance of air was heard only through the first half of inspiration, while expiration was diminished and low in pitch. Breathing became labored, and death took place forty-eight hours after the disappearance of the tube. At the autopsy, the tube was found projecting from the right primary bronchus, with its head resting upon the left side of the trachea in such a way as to partly cut off the air from the left chest.

Its head was two and one-quarter inches below the tracheotomy wound. The left lung showed in its lower lobe a small area of dark-red consolidation. Nothing else remarkable was noted, except that the epiglottis was long and flabby.

The table of the causes of death which is as follows, is not very reliable, as it is made up from the clinical records, there being very few autopsies:

Sepsis	149
Extension	75
Heart-failure	37
Broncho-pneumonia	27
Exhaustion	9
Complications	9
Asphyxia	3
Suppression of urine	2
With convulsions	1
	312

Broncho-pneumonia was more common than the figures would indicate, it being a complication in many cases of sepsis and extension. It is impossible to decide whether pneumonia from the inhalation of food was common or not, although the symptoms of broncho-pneumonia often seemed to follow the ingestion of liquids; this would be a less doubtful point if the same thing did not happen after tracheotomy.

TRACHEOTOMY.

Tracheotomy was done 139 times; 82 being primary, with 11 recoveries; 36 following intubation, with 3 recoveries; and 21 following attempted intubation, with 2 recoveries; 19 cases were moribund at the time of operation.

In comparing the ages it is true, as with intubation, that the younger the child the less favorable is the prognosis, as is shown in the following table:

	Cases.	Recoveries.
Under 3 years	45	4
3-5 years	58	7
6-10 years	19	5
Over 10 years	10	0
Unknown	7	0

In 53 cases operated upon the first day after the appearance of laryngeal symptoms, there were four recoveries; in 31 cases on the second day, six recoveries; in 16 cases on the third day, two recoveries; in 7 cases on the fourth day, one recovery.

The character of the discharge from the tube was of great value in prognosis; for in 34 cases where the discharge was thin and abundant, there were 13 recoveries; in 46 cases where the discharge was gummy at some time, there was one recovery; and in 14 cases where the discharge was suppressed at any time, there were no recoveries. The average length of time the tube was worn in those cases that recovered, was nine days and five hours; and in all cases three days and three hours. (This average does not include the case in which a tube is still worn, two and one-half years after operation.) Two cases had diphtheria of the wound, one recovered. Five had convulsions, six were delirious, and two had subcutaneous emphysema; all died.

Causes of death.— Sepsis, 41; extension, 47; heart-failure, 18; broncho-pneumonia, 4; complications, 3; exhaustion, 2; asphyxia, 2; died on the table, 6.

Broncho-pneumonia, as in intubation, was more common than the figures would indicate, it being present in many cases of sepsis and extension; but an absolute diagnosis was impossible owing to the lack of autopsies.

Treatment.— Each patient upon arriving at the hospital, unless requiring immediate operation, is given steam for inhalation, and hot poultices are applied about the throat. Many times by these means, the spasm and dyspnœa are relieved; while in a certain class of cases, instead of relief following, the dyspnœa is increased. Occasionally relief is obtained by the use of mustard pastes where the poultices had been unsuccessful. Paregoric, in small doses frequently repeated, has been followed by marked relief in numerous cases where the dyspnœa has been of a spasmodic character. Numerous throat sprays have been used with varying results, but the hydrogen-peroxide spray has been on the whole the most satisfactory, and combined with the insufflation of iodoform has been very efficacious in the foul necrotic cases.

No one line of internal medication has been carried out for a sufficient length of time to warrant any definite conclusions, except that corrosive sublimate has been used quite freely and has given quite satisfactory results, for in 95 cases of intubation in which it was used, there were 27 recoveries (27.84%). Turpentine emulsion (ten to fifteen drops spirits of turpentine to one drachm cod liver oil) at times gave marked temporary relief to the dyspnœa. Alcoholic stimulants have been used freely in all the cases. The feeding is very important, especially after intubation. Occasionally the patient is able to swallow food (including liquids) without difficulty with the intubation tube in place; but, as a rule, the swallowing of food, especially liquids, is followed by coughing and a good deal of discomfort. In these cases the most satisfactory mode has been the administration of soft solids by the mouth, with the patient lying down with the head lower than the rest of the body, combined with warm water enemata for the thirst. Cracked ice by the mouth is also allowed. Early extraction of the tube, even if reinsertion be necessary, is done occasionally for the purpose of feeding.

Ultimate Results.— Thirty-seven of the 80 cases that recovered after intubation were seen at least a year and a half from the time of operation; the other cases were not found. All of these 37 were in good health, in perfect voice, and presented nothing that would indicate any former ulcerative process due to pressure of the intubation tube. Ulceration and necrosis from pressure of the tube have been spoken of by various writers as among the dangers of intubation.

In considering the statistics developed in this paper, it is of interest to compare them with the results obtained by the various writers; and the first thing that attracts attention is the high rate of mortality, especially in the tracheotomy series, but it is only fair to remember that in this series the operation was reserved for the more severe cases. Ten per cent. of all the cases reported were moribund at the time of entrance to the hospital.

INTUBATION.

Authors.	Cases.	Recov.	Per cent.
American	1,765	605	34.27
French and German	592	199	33.6
English	66	23	34.85

These, with the 392 cases of the present series, make a total of 2,815 cases, with 32.2% of recoveries. (So far as was possible, the cases reported in Brown's series of 2,700 cases are not included in this report.)

TRACHEOTOMY.

	Cases.	Recov.	Per cent.
Lovett and Munro's Series[4]	21,803	6,135	28.
Romme's Series[5]	1,859	685	36.8
American authors	367	96	26.7
English authors	23	9	39.13

These, with the 139 cases reported in this paper, make a total of 23,941, with 28.67 % of recoveries.

CONCLUSIONS.

Three hundred and ninety-two cases of intubation and 139 cases of tracheotomy have been reported, with a mortality-rate of 79.59% in the former and 88.5% in the latter; 2,815 cases of intubation and 23,941 cases of tracheotomy have been collected and analyzed, showing comparatively no difference in the mortality-rate of the two operations. The results depends more upon the nature of the epidemic than upon the operation. With intubation the results depend more upon the skill and experience of the operator than with tracheotomy.

Thirty-seven cases were seen at least a year and a half after recovery from intubation, with perfect voice, and with nothing that would indicate any ulceration from pressure of the tube.

Clinical Department.

TWO CASES OF APPENDICITIS, ONE ASSOCIATED WITH UTERINE FIBROID, THE OTHER WITH PREGNANCY.[1]

BY S. J. MIXTER, M.D.,
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THE following cases of appendicitis are reported because they present a point of interest that the reader has not met with, either in the other cases operated upon by him, or among those reported by others. In both cases an enlarged uterus was present, and in both, the correct diagnosis was not made until the operation or the day before it. When an attack of peritonitis occurs in a patient having an abdominal tumor, one is always apt to ascribe it to the tumor. These cases show that the appendix should also be considered as a possible cause of trouble.

CASE I. Mary M., over fifty years of age; married twenty-three years; no children; always strong and well. Three years ago noticed a gradual enlargement of abdomen, which has continued to time of operation. Flowing slight at first, but during past year quite profuse. Within a year has had several attacks of abdominal pain; three months before admission to hospital had a similar attack, but severer than previous ones. A physician, was now called for the first time, and found the patient "almost in a state of collapse," with general abdominal tenderness and distention, vomiting, and other symptoms of severe peritonitis. The patient gradually recovered from these acute symptoms, but the abdominal tumor then detected, gradually increased in size; there was constant pain, more flowing, and increasing weakness.

She was admitted to the Carney Hospital July 1, 1891. On examination I found a tumor reaching above the umbilicus; it was hard and apparently closely connected with, or a part of, the uterus, and firmly fixed in right iliac fossa.

The next day I opened the abdomen, intending to remove the tumor, probably a uterine fibroid. After tying the left broad ligament, the tumor could be more easily turned out and the adhesions on the right side reached. While separating these adhesions the finger opened a cavity containing a considerable amount, perhaps four ounces, of foul pus, and projecting into the abscess cavity was the swollen and inflamed appendix. The pus escaped into the peritoneal cavity, which was washed out with hot salt solution. The uterus was then removed at its vaginal insertion, and the stump dropped back. The appendix, together with a large mass of inflammatory tissue, was removed, the stump of the appendix being simply tied with silk; and a very large amount of iodoform gauze was packed into the pelvis and about the cœcum.

The gauze was removed on the third day. Recovery was rapid and uneventful, the patient being discharged well in about six weeks.

CASE II. Rose M., thirty-two years old, married. Four months ago, when seven months pregnant, had severe pain in abdomen, tenderness, fever, etc., and was delivered of a dead fœtus. Did not recover well; pain and other abdominal symptoms persisted, and she was confined to her bed for three months. The pain was so severe that morphia was required every night. After being about the house for a short time she had an exacerbation of the symptoms that had never disappeared, and was admitted to the gynecological ward of the Carney Hospital. Dr. Johnson, on duty in that department, asked me to examine her with him, under ether. An ill-defined tumor could be seen and felt, extending from the iliac fossa to the ribs, and reaching almost to the linea alba. Nothing abnormal could be found in the pelvis.

The patient, having been transferred to the surgical service, was operated on September 23, 1891. An opening was made in the linea semi-lunaris, and a hard mass could be seen and felt outside the ascending colon and about the cœcum, the bowel being pushed toward the median line. This mass was plainly inflammatory; and on separating the cœcum from it, an abscess, situated at the brim of the pelvis, as large as a walnut, was opened, and in it were found two hard fæcal concretions. Extending upward from this cavity, and outside the colon, could be followed a sinus; in the midst of the inflammatory mass and running parallel to it and behind it could be seen the appendix. This sinus was followed up by tearing with the finger until the kidney was reached. Just over the lower end of the kidney was fixed the much-thickened and perforated end of the appendix. This was the starting-point of the sinus, which ended in the abscess cavity spoken of just at the brim of the pelvis. The appendix was separated from its adhesions, cut off above to the bowel, and its invaginated end closed with a continuous silk suture. The cavity was packed with iodoform gauze.

Patient had a sharp attack of bronchitis following the operation, but had no peritoneal symptoms, and was discharged well in less than five weeks.

[1] Read before the Surgical Section of the Suffolk District Medical Society, November 4, 1891.

[4] American Journal Medical Sciences, July, 1887.
[5] La Tribune Médicale, Paris, October, 1891.

THE Brussels Chamber of Deputies has prohibited all public expositions or demonstrations of hypnotism.

OPERATION FOR THE RADICAL CURE OF HYDROCELE AND INGUINAL HERNIA.[1]

BY FRANCIS S. WATSON, M.D.

OPERATIONS (*a*) for the radical cure of hydrocele, by excision of the tunica vaginalis; and of (*b*) inguinal hernia, by McBurney's method; performed at the same time on a man forty-seven years of age, one year previous to date of this report.

I have thought that it might be of interest to the Society to note the results of these two operations performed at the same time upon this man, one year having elapsed since they were done. I do not show him at this time as an example of accomplished radical cure, at any rate of the hernia; although I think we may be fairly certain that he will have no return of his hydrocele.

The patient has been the subject of double inguinal hernia for about ten years, and of hydrocele of the left side for about six years. The hernia on the *right* side is still easily controlled by a truss, while that on the *left* side has been very troublesome to manage with a truss, for a year previous to the time of the operation. The hydrocele on the same side as this hernia, had failed of cure by repeated tappings, and the patient was advised by me to have the attempt at radical cure of both hernia and hydrocele on the left side, made at the same time.

Early in November, 1890, the hernial and hydrocele sacs were exposed by one long incision. The hydrocele sac was much thickened, while that of the hernia was very thin, except about its lower end, where it was found to be tightly adherent to the sac of the hydrocele. After separating these adhesions, the hydrocele sac was laid open anteriorly, and excised, being cut off as close to the testicle as possible. The hernial sac was empty (the gut being easily reducible, and the ring very wide), and, about the ring, was slightly adherent. It was separated entirely from about the inner surface of the ring, and then tied high up within the ring, and cut off close to the ligature. The skin on either side the ring was then inverted, as directed by Dr. McBurney, and sutured. The ring was, as has been said, very wide; its sides were approximated by three silk sutures; a plug of iodoform gauze was inserted into the space between the sides of the wound and an aseptic (sterilized) dressing applied externally. The sutures were removed at the end of sixteen days, in which interval the wound had partially filled with a mass of healthy granulation tissue. The patient remained in bed for six weeks, by the end of which time there remained but a superficial granulating area, which completely healed at the end of ten days more. The wound of the scrotum made for the purpose of excising the hydrocele sac was tightly sutured, and united by first intention. There was a good deal of shock immediately following the operations, but with that exception the patient had no untoward symptom whatever.

For two months after getting up the patient wore a firm inguinal pad, which he discarded at the end of that time. The ring was then seen to be occupied by a mass of connective tissue which at that time retained the gut above it perfectly. To-day, at the end of one year, he reported himself for examination. You will notice that there is not the slightest tendency to return of the hydrocele, and also that the same is true thus far of the hernia. The ring is still occupied by a plug of connective tissue which bars entirely the introduction of the finger from below, and equally of any protrusion of the hernia from above. The case, therefore, is up to date wholly successful. I note, however, that while the connective tissue plug is at present sufficiently strong to retain the gut behind it, that it nevertheless is very much less dense than it was when I examined it about five months ago, and that it gives to the touch the impression that less force would be required now than then to displace it.

[1] Read before the Surgical Section of the Suffolk District Medical Society, November 4, 1891.

A CASE OF DIVISION OF TENDONS AND NERVES AT THE WRIST.[1]

BY FRANCIS S. WATSON, M.D.

THIS man, who is about thirty-two years old, I wished to show in connection with Dr. Conant's cases, as another example of a similar condition.

One month ago, he drew a knife across the front of his left wrist, with suicidal intent, and with the result of dividing the following structures: The tendons of the flexor carpi radialis, palmaris longus, flexor sublimis digitorum, flexor proprius pollicis, flexor carpi ulnaris, and one of the tendons of the flexor profundus digitorium. Beside these tendons, the median and ulnar nerves and the ulnar artery were divided, and the wrist joint opened on the ulnar side of the arm. The incision was transverse, and extended entirely across the anterior surface of the wrist, on a line about one-half an inch above the junction of the carpal and metacarpal bones.

It was possible to draw into view from the palm, the severed ends of three of the tendons of the flexor sublimis and that of the palmaris longus, these as well as those of the flexor carpi ulnaris and radialis were sutured. It is, however, very doubtful whether the ends of the tendons of the sublimis were united to their proper mates, and it is certain that one tendon of the sublimis and one of the profundus, were not united at all. And it is also certain that neither median nor ulnar nerve were sutured, as it was impossible at the time to discover the distal ends of either without a more prolonged search than the condition of the patient (who had lost much blood previous to coming to the hospital) would allow with safety. The ulnar artery was tied at both ends, the outer wounds closed tight and a sterilized gauze dressing applied. The hand and forearm were placed on a splint with the fingers in a flexed position.

The wound united by first intention. At the end of two weeks, the patient had recovered sensation in the region of distribution of the median nerve; and at the end of three weeks in that of the ulnar, though to a less degree. He is, at this time, one month from the date of operation, able to partially flex all the fingers and the thumb, and his ability to do so, has rapidly increased during the last four days.

That which interested me in this case especially was the restoration of sensation to all the fingers and the thumb, when we knew that the median and ulnar nerves had been severed and not reunited by suture (the suture of the nerves had been left until the last, and then was not done owing, as has been said, to the threatening condition of the patient, in part, and, in

[1] Read before the Surgical Section of the Suffolk District Medical Society, November 4, 1891.

part through failure to readily find the distal ends); and also the restoration of function of the divided tendons, in spite of the failure to suture two of them, and also when the tendons that were sutured may not have been properly matched.

I would also like to say how much more readily the tendon sutures were applied by employing the device that Dr. Mixter showed to us a year or so ago, of drawing out the upper end of the tendon to be sutured, as far as it is desired, and then maintaining it in position by transfixing the tendon and its sheath at the same point above its cut end, the tendon then cannot retract, and no strain comes upon the sutures until they are all applied and the needle withdrawn.

CASE OF DOUBLE OVARIOTOMY.[1]

BY MALCOLM STORER, M.D., BOSTON.

While I regret that the case which I have the pleasure of reporting does not deviate more from the normal, it may still have some points of interest.

The patient, Mary A., was very kindly referred to me by Dr. H. H. A. Beach. She was born in Massachusetts, was eighteen years of age, and was a somewhat undeveloped and anæmic blond, tending a little towards the scrofulous type. She was about five feet in height, and weighed after operation ninety-eight pounds. As possibly having some slight bearing upon the vexed question of a hereditary disposition to abnormal growths, it may be mentioned that an uncle on the maternal side died of cancer. That her father had some years ago a cancer of the lip, removed by Dr. Beach at the Massachusetts General Hospital, and that a somewhat strikingly large number of other members of her family have been troubled by the smaller cystic growths of one kind and another.

She began to menstruate at twelve and one-half, the first catamenia being attended by much pain, backache, etc., although since that time menstruation has been regular, of normal amount, and not attended with discomfort. While never having suffered from any definite disease, ever since puberty she has been more or less of a chronic invalid with obscure symptoms, headache, dyspeptic disturbances, lassitude, etc., but was able to keep about until eighteen months ago, when she first noticed abdominal enlargement. At that time her physician, Dr. L. H. Luce, of West Tisbury, found well-marked enlargement of whole abdomen, fluctuation distinct in upper abdomen, gradually diminishing towards flanks and pubes, and uniform dulness over abdomen except a narrow space extending the entire length of hypochrondiac and left iliac regions. Physical signs were not altered by position. "Internal examination was unsatisfactory but showed a large, fluctuating tumor pressing down anterior to the uterus." Having diagnosed the case correctly, Dr. Luce decided in view of her run-down condition, to wait a few months before advising an operation, and it is largely due to his efforts towards building her up, that her excellent recovery is to be credited.

In the last few months catamenia have been regular, their last appearance being ten days before operation. Her bowels had been regular, but defecation was often attended by great pain, which ceased with the movement. She has also had occasional attacks of quite severe dysuria.

On examining the patient the heart and lungs were found to be in good condition. The urine showed nothing abnormal in bladder or kidneys. Examination of the abdomen gave practically the results observed by her attending physician eighteen months previously, except that the tympany in the flanks had almost disappeared.

Measurements were as follows: Abdomen at level of anterior superior spine, thirty-three and one-half inches; at umbilicus, thirty-three inches; at epigastrium, thirty and one-half inches.

Through the thin abdominal walls the tumor could be palpated with ease. It apparently was uniform in outline, and the consistency suggested contents of a colloid nature, although this was afterwards found to be a mistake. Owing to difficulties in the way of a vaginal examination, no diagnosis as to which ovary was affected could be hazarded.

I operated September 22d, kindly assisted by Dr. C. P. Strong. The patient's abdomen was prepared as follows: After being washed and shaved, a poultice of green soap was applied for twelve hours. Two hours before the operation this was changed for one of bichloride, the soap being carefully removed with hot water. Immediately before the operation she was scrubbed with bichloride 1–1000, and then with a mixture of equal parts of ether and turpentine. The instruments were sterilized, and dry sterilized cheesecloth was used for sponges.

The incision, a trifle less than two inches long, was made in the median line, without paying any especial attention to the linea alba. On entering the peritoneal cavity, the cyst wall presented, and on puncturing it with a large trocar, fifteen pounds of thin, dirty, straw-colored fluid was evacuated. The cyst was then found to be one of the left ovary, and there being no adhesions, was easily withdrawn through the opening. The pedicle, which was some two inches long and the thickness of a small finger, was clamped, cauterized, and tied with strong silk in the customary manner, and dropped inside.

The right ovary was found to be in a state of cystic degeneration, being enlarged to the size of a small lemon, and its surface studded with small cysts, and was accordingly also removed, the pedicle being treated in the same way. The abdominal wound was closed with silkworm gut, all the layers being included in each suture. The wound was dusted with aristol and a dressing of sublimate cotton applied.

The patient made an uninterrupted recovery. Her temperature rose to 100° on the evening of the third day, but promptly sank on her bowels being moved by a Seidlitz powder. Forty-eight hours after the operation catamenia came on again, and she continued to flow slightly for four days. After flowing for some twelve hours, being perfectly comfortable meanwhile, she suddenly discharged from the uterus some six ounces of offensively acrid sour-smelling fluid, only slightly tinged with blood. Before and after this she had the ordinary catamenial flow. She had a similar discharge, less in amount, twelve hours later. Stitches were removed on the eighth day, and patient sent home on the twenty-sixth.

[1] Read before the Section for Clinical Medicine, Pathology and Hygiene of the Massachusetts Medical Society, Suffolk District, Medical Society, Nov. 18, 1891.

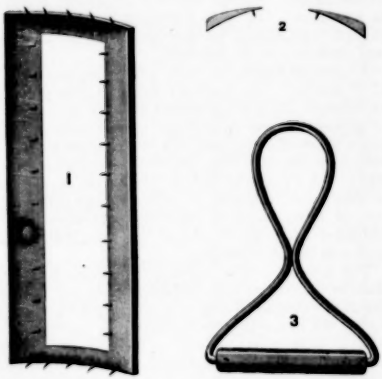
Subscriptions are being made in Vienna to place a bust of Carl Braun in the arcade of the university.

New Instruments.

A NEW METHOD OF CUTTING AND APPLYING SKIN GRAFTS IN THIERSCH'S OPERATION.

BY S. J. MIXTER, M.D.,
Surgeon Carney Hospital; Surgeon to Out-Patients, Massachusetts General Hospital.

THE method of skin grafting as described by Thiersch is so well known and of such recognized value, that a description of its great possibilities, and the accepted details of the operation, need no new description. I wish only to call attention to two practical points that I think are new and which make the operation much more simple and accurate.

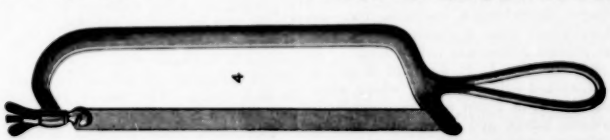


With practice and care thin strips of the skin may be taken from the thigh by the ordinary amputating knife. As a rule, such strips are ragged at the edges, and much of the graft is wasted, as the surface to be repaired must be entirely covered.

I have had made by Codman & Shurtleff, (Boston), the instrument here figured. It consists of a fenestrated, curved plate, of which Fig. 1 represents the under surface and Fig. 2 the cross-section. This has sharp needle points as shown, which serve to keep it in place on the skin of the thigh, which, being stretched before the plate is applied, is kept so while the graft is being cut. This plate being applied to the thigh, the roller (Fig. 3) is pressed firmly down upon it, thus flattening the skin between the thin edges of the plate, and the knife (Fig. 4) being carried at a suitable distance behind the roller, cuts a graft, thin and of uniform thickness. The knife should be used like a saw, with short, sharp strokes. Care must be taken that the knife blade is carried as nearly parallel with the plate as possible, otherwise the edge is turned or nicked and the plate damaged.

The plate should be made of *hardened steel*, not brass, otherwise it becomes rough and the knife is spoiled every time it is used. The blade of the knife should be very sharp, thin and well tempered. In cutting the graft let the knife pass under it, leaving it on the surface from which it was taken.

The method of applying the graft so cut is the second point where I have a suggestion to offer. A few thicknesses of soft tissue paper (toilet paper is as good as any), properly sterilized and wet with warm salt solution is laid on the graft, and the paper and graft lifted together. The edges of the graft may be straightened out with a few strokes of a probe and applied in the proper place, skin down. The paper is then removed, leaving the graft in place with no curled edges. Should the graft be too long for the place where it is to go, the paper and adherent skin may be cut accordingly. Some practice is necessary before the instrument can be properly used. It will not "work itself."



Medical Progress.

RECENT PROGRESS IN ORTHOPEDIC SURGERY.

BY E. H. BRADFORD, M.D., AND E. G. BRACKETT, M.D.

(Concluded from No. 26, page 682.)

GENU VALGUM.[17]

THE biennial statistics of the Rachitic Institution at Milan, directed by Panacheri, show 662 cases of genu valgum. The genu valgum double is much more frequent in children than unilateral in the first years of life. It is treated by apparatus, wood or steel on young children, if the deformity is not very pronounced. Forcible correction was made three hundred and eighty-one times in two hundred and seventeen patients. The method of Tillaux was employed, and there was never any articular reaction or tearing of the internal tissue. In six cases a relapse was noted, and in six a paralysis of the external popliteal nerve, attributed by the writer to a compression of the apparatus. In cases eighteen years old it was corrected by osteotomy. Sixteen osteotomies have been done in ten cases. All have been followed by cure.

CURVED OSTEOTOMY IN ANCHYLOSIS OF THE KNEE.[18]

The writer reports a case of osteotomy of the femur just above the condyle, in a case of long-continued anchylosis at the knee-joint. Transverse incision was made; the tibia was separated, and, by means of a chisel, the femur divided transversely with a somewhat curved section just above the line of articulation. The section was made so near to the point of articula-

[17] Achille Zuffi: Archivio di Ortopedia, 1890, 4, 5.
[18] Kummer: Revue d'Orthopedie, Nov. 1, 1890.

tion that on straightening the limb subluxation was entirely corrected. Dissection was made in a curve corresponding to the normal line of the condyles. The case was reported to be thoroughly successful.

ARTHRECTOMY IN TUBERCULAR AFFECTIONS OF THE KNEE.[19]

The article is based upon seven cases observed by the writer. The conclusions are that arthrectomy is an operation without danger if done with rigorous antiseptics. Carefully done and carefully drained, it is suitable to certain cases of tumor albus; cases of tubercular synovitis, when the bones are not attached, children as well as adults. In children there are always present epithyseal foci, and osteo-arthrectomy would be done in preference, avoiding the shortening which resection gives. In the cases of osseous lesion in adults, resection is better. Anchylosis is to be aimed at in arthrectomy, and in children an appliance is needed after the operation, for some time, not in adults. Compared with the resection, arthrectomy gives the same therapeutic result: it has for its advantage its simplicity, the amount of treatment and a better functional result.

RUPTURE OF THE QUADRICEPS TENDON OF THE LEG ABOVE THE PATELLA.[20]

He reports a case of this accident in a man of sixty-seven, where the tendon was sutured. In the case reported there was a great deal of suppuration, but the result was satisfactory; recovery occurred in a month and was aided by massage. Marc See, Monod, Kirmisson believes that a cure can be made without surgical intervention, and that the effusion into the knee disappears rapidly under the compression.

DISLOCATION OF PATELLA.

A method of treating a persistent case of slipping patella is reported by Mr. Bilton Pollard.[21] The case was an obstinate one, and had been previously operated upon by Macewen's operation, for the existing genu valgum, which was present, and supposed to be the cause of the trouble, but without relief. The operation performed by Mr. Pollard consisted of chiselling away a part of the trochear surface of the femur, sufficient to make a deep groove, in which the patella could slide. It was found that the natural groove in this case was remarkably small, and provided no distinct resting place. A portion of the inner part of the capsule was also excised, and thus this part of the knee strengthened. The case did well, and in four months there had been no return of the trouble, although a slight grating could be felt on flexion and extension.

INTERNAL DERANGEMENT OF THE KNEE.

Mr. Noble Smith[22] advocates thorough trial of Hey's method of reduction by manipulation, repeated frequently, and cites cases in which this has succeeded in preventing relapse. He claims that the cartilage has been changed in form by the pressure in the unnatural position, and tends to work its way out unless kept in place sufficiently long to regain its shape. His method is to repeat the manipulation daily for a few days, then once every two or three days for a fortnight or more. He reports no relapses since pursuing this method.

[19] Kardilloz: Thesis, Paris, Feb. 18, 1891.
[20] Society of Surgery, June 17, 1891.
[21] Lancet, 1891, vol. 1, p. 1203.
[22] Loc. cit., 1891, vol. 1, p. 1307.

BENDING OF THE NECK OF THE FEMUR.[23]

The writer describes several cases of this deformity, and gives specimens indicating the curvature. The literature is also carefully investigated. A case is reported which had been operated upon successfully by Hoffa, and the specimen indicates the amount of curvature at the neck, indicating that this rachitic deformity, which has not been hitherto regarded of importance, is, in certain cases, of interest, and demanding surgical treatment.

OPERATIVE TREATMENT OF IRREDUCIBLE DISLOCATIONS OF THE HIP-JOINT.[24]

The irreducibility of these luxations is due to the interference of the capsule or the muscles. The capsule can by its intact portion interfere with traction; the head button-hole through the capsule leaving a small opening; or one of the flaps of the capsule intervene and interfere with reduction. The muscles can oppose by being button-holed by the head, or the capsule may be interposed between the head and the cavity. In recent dislocations, if the irreducibility is certain, the surgeon can use arthrectomy and remove the ligamentous adhesion. If the luxation is old, one can try forcible movement, but it is necessary to use it with care. In dislocation a year old no manipulation is likely to be successful, and under those circumstances operative procedure is advisable. Resection to the joint should be done by an anterior incision. The ligamentous muscular obstacles should be divided, the cotyloid cavity enlarged, and the resection tried. If this is not possible, exsection of the head can be done, enlarging the incision if necessary. The author reports seventeen cases; one a case of a child twelve years old, with a dislocation of three years' duration, which was cured by arthrotomy.

OPERATIVE TREATMENT FOR OLD LUXATIONS OF THE HIP.[25]

These writers mention a case of operative treatment of old ischiatic luxation of the hip-joint so severe that walking was impossible without crutches, and which they were unable to reduce. The operation was as follows: The femoral head was exposed by a posterior incision over the projecting head. The capsule was freed as it was adherent to the head, and the cotyloid cavity was enlarged with the gouge and mallet and the socket of the femoral neck was placed into the acetabulum. Healing was rapid, and recovery was made with some motion at the joint. The result is claimed to be much better than of cure by resection; only the head being removed.

OPERATIVE TREATMENT IN CONGENITAL DISLOCATION OF THE HIP.[26]

In a most excellent article on the subject the writer refers to the different procedures which have been introduced in the treatment by operation in that deformity. In regard to the pathology, he states that there are different articular lesions found, according to the age of the patient. In new-born children little alterations are found in coxo-femoral articulation. The cotyloid cavity is never wanting. It is not as deep as normal, and the normal curve of the posterior portion is wanting. Sometimes it is filled with connective tis-

[23] Schultz: Zeitschrift for Orthopedie Surgery, 1, 1.
[24] Dennetieres: Paris, Thesis, December 24, 1890.
[25] Ricart and Nelaton: Mereredie Medical, November 26, 1890.
[26] Hoffa: Revue d' Orthopedie, January 1, 1891, p. 24.

sue or with fatty tissue. The head of the femur is not modified in general. The capsule and the round ligament are always intact, and in some cases they are only a little thin or elongated. The muscles are shorter and less developed, according to Verneuil. As the child grows older, and begins to walk, alterations take place. The cotyloid cavity does not grow as quickly as the rest of the bone, and the connective tissues increase and fill the cavities. Sometimes exostoses develop in the bottom of the cavity. The head of the femur elongates itself, or it sometimes flattens as if depressed, and sometimes presents a projection. It is often bent and applied to the body of the femur, making the neck incompletely developed. The capsule is solid and resistant; thus giving to the head an abnormal play. The round ligament is generally preserved, sometimes flattened and delicate, sometimes solid and thick. The muscles are retracted; at least those which are near the pelvis; not only those going from the great trochanter to the pelvis, but also those which pass around the articulation.

In the adult the changes are more marked; the head of the femur is raised, and the capsule remains intact, forming a very solid sac. The cotyloid cavity generally takes a triangular appearance, with one of the angles above and behind. Sometimes it is found completely filled, and in one observation exostoses in its place. Muscles are frequently modified. These observations which have been taken from autopsy are confirmed by observations by the writer on cases that have been operated on; and he claims that there is always a retraction of the soft parts around the affected hip.

The orthopedic treatment, the writer claims, has not taken into account this muscular retraction, and the cases of Pravac, which were considered to be cured by Malgaigne, who proved that the cure was not permanent. The case of Buckminster Brown required a treatment by confinement to bed for a year and a half. Volkmann reported some cases which were satisfactorily treated by extension, but these cases were not permanently improved. The same is true of the treatment by silicate bandage, and appliances have not been of great value.

Operative treatment was first proposed by Guérin. It consisted of subcutaneous tenotomy. Bouvier, Brodhurst and others have attempted to use this method, but without marked success. Mayer tried osteotomy. Hueter advised resection of the head of the femur.

But, in brief, it may be said that the result obtained by resection has not been satisfactory, although the method has been tried by a number of surgeons, Italian, German, French and English. Hoffa collects 27 cases of resection, and shows us the following results: three good results, five average, and eight bad, without a single case of cure. He claims that the difficulty in correcting the reduction is due to the retraction of the soft part. He reports a number of cases which he operated upon by a method of his own; which consists of a straight incision, with a complete separation of all the muscular insertions on the great trochanter, and a complete ring of the capsule around the head of the femur. The place of the cotyloid cavity is then found, and is enlarged. The head is placed into this cavity in the same manner that a dislocation would be reduced, and the operation is concluded.

The results which he has obtained in these cases have been in every way satisfactory, with re-establishment of movement in all cases, and cure. Kaci and Redard speak of the treatment of congenital dislocation of the hip by means of manipulations, which consist of flexion of the thigh, abduction, rotation, and extension. These exercises are to be carried on daily for some time, and in young children they report an improvement in the position of the head of the femur; this improvement to be maintained by a fixed dressing of plaster-of-Paris.[27]

Schüssler[28] prefers the resection of the hip in certain cases to Hoffa's operation, and reports a case with excellent results, not only in regard to the shape of the limb, but as to the functions, perfect motion having been established. The operation consisted of removing only the head of the femur, and a corner of the anterior portion of the neck, with the making of a depression for a cotyloid cavity. The method of Hoffa is not suitable for all cases. It supposes normal anatomical conditions, and these are not always found even in infancy. The patient of Schüssler was a girl fourteen years old, and there was a deformity in the head of the femur, which was altered in shape. Deschamp, in the *Gazette* of Liège, March 13, 1890, p. 280, reports a successful case of resection in a girl fourteen years of age, with apparent successful result.

William Adams[29] has treated six cases of congenital dislocation of the hip, two being double and four simple, according to the method of Dr. Buckminster Brown, in three of the cases the right hip and in one the left. In two of these cases the treatment was carried out for two years. The result obtained is most satisfactory, for a careful measurement does not allow any shortening of an eighth or a quarter of an inch, and in one case it was impossible to find any difference in length of the limbs. The ilio-femoral triangle of the affected side corresponds closely to that on the sound side, in such a way that the head of the femur is maintained almost entirely in natural position, and there is no tendency to a spontaneous dislocation, either with or without movements. The patient still wears an apparatus as a means of protection.

WIRING OF THE VERTEBRÆ AS A MEANS OF IMMOBILIZATION IN FRACTURE AND POTT'S DISEASE.[30]

This operation has been done by Dr. B. E. Hadra for dislocation of the sixth cervical vertebra, and with such results that he claims it may be used as a means of immobilization in Pott's disease. In his operation, the ligamentum nuchæ and interspinous ligaments were severed transversely, and the wire passed several times, in the figure-of-8, around the spinous processes of the sixth and seventh cervical vertebræ. The immobilization thus obtained was satisfactory, and although the case was of some duration, the symptoms were somewhat relieved. He considered, however, that section of the ligaments, as performed, interfered with the rapid healing, and suggests that only the muscular attachments be divided, and the loop passed over the processes by means of a curved needle. In this way the operation is comparatively bloodless, and can easily be performed. In wiring the transverse processes, the operation is more difficult, as the muscles must be more extensively divided and drawn aside. To avoid the nerves, he considers it better to first surround one process, then carry the thread to the next one, and

[27] Revue Maladies de l'Enfance, November, 1891, p. 503.
[28] Centralblatt f. Chir., January 17, 1891.
[29] British Medical Journal, February 22, 1890, p. 406.
[30] Times and Register, 1891, May 23, p. 423.

again tie it here by a loop, so as to have only one wire in the interspace.

LATERAL DEVIATION OF THE SPINE AS A DIAGNOSTIC SYMPTOM IN POTT'S DISEASE.

This subject has been carefully considered by Dr. R. W. Lovett.[21] Attention is called to the prevalence of this condition, particularly in the early stages, and its importance as a diagnostic sign. It is regarded by him as generally of muscular reflex action, analogous to that seen in joint disease. It differs from the distortion in true scoliosis, as the curve is more sinuous, displacing the shoulders laterally, and in the absence of marked rotation, which is more apt to be on the side of the concavity than on the side of the convexity. The amount of deviation was found to vary from two or three to eight degrees from the perpendicular, and this latter was extreme and not usual. In slight degrees it may often be more easily recognized by viewing the patient from before. The difficulty of properly treating these cases is referred to, and support by means of the plaster jacket is regarded as the most satisfactory.

HUMAN CARRIAGE IN REFERENCE TO CURVATURE OF THE SPINE.[22]

Staffel describes the three following types: The rounding back, with a kyphosis, dorso-lumbar, apparent or real, indicates, according to the writer, a temperament without energy. The cause of this attitude is a fault of will rather than of muscular feebleness. These cases represent the most favorable ones for treatment, and a corset well made is sufficient for them. The second class, is the flat back with a lumbar kyphosis (relative or absolute), lordosis of the dorsal region (relative or absolute), with the vertebral column retaining the character that it had in infancy. This form brings with it a tendency to lateral curvature, rickets and a defect of muscular energy, and also a tendency to the first variety of scoliosis. The hollow back is the third variety, which comes from a narrow pelvis surmounted by a spinal column with an exaggerated lumbar curve; the dorsal region is flat.

Besides these types there are other mixed forms; as back of tailors, which consists in an exaggeration of the normal curve, the back being both round-shouldered and hollow in the lumbar region. All these forms we can find with scoliosis, though the latter is more common in the round and flat backs. The lateral posterior curves are generally considered as secondary to scoliosis, but it is supposed that in a certain number of cases it may precede scoliotic deformity. In severe cases of scoliosis there is no trace of a normal lumbar lordosis, which would indicate that the lordosis was wanting before the beginning of the affection, which is developed especially with flat backs. The seated position is particularly dangerous for the development of scoliosis; and Staffel recommends treatment to diminish as much as possible the sitting position, and to increase the normal curve in the lumbar region by the employment of a suitable seat.

OSTEOMYELITIS OF THE VERTEBRAL COLUMN.[23]

Observations of this disease are not numerous. It is analogous to the osteomyelitis which is seen in the long bones. It can attack the bodies of the vertebræ and the vertebral arches. It may be acute or chronic.

SCIATIC SCOLIOSIS.[24]

The author mentions that he first observed two cases in 1878, at Liege. In 1886 Alberg reported three cases of this affection, and Nicoladoni has published several others, showing the relation between scoliosis and sciatic neuralgia. In 1888 Babinski reported five cases in Charcot's clinics, and claimed the first description of the affection, but others have also claimed the first investigation. Gutenbauer has had the opportunity to watch nine cases. Men are more frequently attacked than women. The symptoms are always the same, and appear in patients who have suffered from sciatica for a long time. The twisting of the vertebral column comes on gradually or suddenly. As Nicoladoni has observed, there is a tender point always to be felt between the last lumbar vertebræ and the posterior iliac spine. It may be added as a matter of diagnosis, that this variety of scoliosis disappears completely when the patient is suspended. The pathology of the affection is not definitely known. The writer considered that the affection is due to a muscular spasm, and for treatment he had found benefit from massage and electricity. In one case long-continued baths were an advantage; and in one case nerve-stretching of the sciatic nerve was tried with benefit.

Lamy, in the *Review of Orthopedic Surgery*, contributes an article on scoliosis in sciatica, and mentions the variety of attitudes.[25] He speaks of different attitudes, with a certain amount of variation in curve.

Levy [26] writes of the fact of the physiology of lateral curvature, and states that the bad school-sitting in the third position in writing, and in their fitting schools, may be the occasional cause of lateral curvature, but it is not the primary cause; if that were the case, boys would be as often attacked as girls. The true cause is rather in the physical education of young girls. The modification in the education of girls should consist in approaching as far as possible to that which is given to boys. The difference is the method of educating both sexes, especially in that the young girls remain in a seated position a longer portion of the day than boys; and the author advises that the hours of study should be interrupted by gymnastic exercises, singing-lessons, dancing-lessons. He thinks that it is better not to attempt to burden girls with unnecessary scientific notions, but to develop their bodies.

CAUSES OF ROTATION OF THE VERTEBRÆ IN SCOLIOSIS.[27]

Mr. Little gives the results of experiments on the cadaver, in attempting to produce rotation by superincumbent weight. He found first, that in the living subject, rotation was produced by lateral flexion in the upright position, but that this did not occur in the prone. In the first experiments the cadaver was laid on the back, and forcible flexion made; but no rotation was produced. The anterior common ligament was divided, and later the intravertebral discs and posterior common ligament; but no rotation was produced. Under superincumbent weight a lateral curve resulted, but no rotation, and this also after the ligaments were

[21] Transactions of the American Orthopedic Association, vol. iii, p. 182.
[22] Staffel: Centralblatt für Orthopedische Chirurgie, November 1, 1890.
[23] Tournadour: Paris, Thesis, November, 1890.
[24] Gutenbauer: Medical Wochenschrift, April 17, 1890.
[25] Revue d'Orthopedie, May 1, 1891.
[26] Copenhagen, 1889.
[27] Lancet, 1891, vol. i, p. 191.

divided as before, and the tissues between the transverse processes on one side were severed.

His inference is that it is not an accompaniment of normal flexion, but that it is due to the unequal tension of the muscles. The erector spinæ, longissimus dorsi, sacrolumbalis, multifidus spinæ, rotatores spinæ, have insertion to one side of the spine. If acting together, there is no tendency to rotation; but when acting alone as a lateral flexion, a tendency to rotation is developed.

MUSCULAR STRENGTH OF THE BACK IN GROWING GIRLS.[38]

Dr. C. L. Scudder has grouped the results from a large number of observations on the strength of growing girls. These were taken of school children, by means of a chair with a movable back, and the record taken by a self-registering dynamometer. At the same time the height, weight and age were taken; and thus a valuable table is given for comparison of the cases of lateral curvature. The element of muscular weakness is regarded by the writer as an important factor, and thus the treatment should be adapted more intelligently to individual cases.

TORSION OF THE SPINE IN SCOLIOSIS.[39]

This is to be regarded as a true osseous torsion, according to Lorenz, Fischer, Albert, Mikulicz. Kocher and Nicoladoni, of Berlin, have regarded it, not as a true torsion, but as an optic illusion resulting from the lack of symmetry of the vertebral column. To demonstrate this, Nicoladoni removed a cortical layer of a vertebral body, and he claims to have proved that there is not a torsion of the vertebræ reaching to the summit of the curve, but only of the vertebræ of transition. This torsion is in correspondence with the anterior ligament. The veins of the side are pushed to the side of the convexity. Laterally the fascia of the anterior ligament is large, thin towards the side of the convexity, and thick and folded on itself on the side of the concavity. This may be regarded as the consequence of the more rapid growth of the bone on the side of the convexity, and the intimate union of the periosteum with the ligamental fibres. The cause of the asymmetry of the scoliatic column is, according to Nicoladoni due to the modifications in growth, produced by difference of superincumbent weight. In support of his view he cites the modifications of the form and of position which he has been able to find upon the epiphysal cartilages of many young subjects, among these an infant of a year attacked with scoliosis. In this case the ossification was much more advanced on the convex side, while on the concave side the ossification in a large part of the epiphysal cartilage had not yet begun.

TREATMENT OF SCOLIOSIS.[40]

The writer divides the distortion into three phases or periods: first, the curvature before there is any rotation; second, the curvature with rotation; and third, a curvature with an osseous change of the vertebræ. In the first stage it is impossible to form a diagnosis without taking off the shoes; for, as a rule, in children and adolescents, flat-foot and alteration of the pelvis, determine to a certain degree the deformity. But when these modifications have been produced, any increase of the heel will exaggerate the degree of scoliosis in such a way that a spine slightly curved can acquire a very considerable curvature with raised heels, a curvature which will increase in proportion to the height of the heels. This can be demonstrated by examination.

[38] Transactions American Orthopedic Association, vol. iii, 1890.
[39] Nicoladoni: Thesi, Vienna, 1889.
[40] Brodhurst: Revue d'Orthopedie, March, 1891.

AN ARRANGEMENT FOR CORRECTION OF DEFORMITY OF THE THORAX IN SCOLIOSIS.[41]

Hoffa describes an arrangement which will exert pressure upon the projecting rib in the thorax, and will correct the deformity which is present. This apparatus can be used in exercise; it can also be used for correction and the application of a plaster jacket. The arrangement is more directly for the correction of rotation, not for the protection of the ribs. The arrangement consists of a single bar, which is fastened between two uprights. The bar is bent so as to encircle the thorax behind, and an inch steel piece passes in front. From this bar, rods with screw-threads working at right angles are fixed so that they can be adjusted laterally to press upon any position. These rods are furnished with a plate so as to exert pressure where applied. In this way a direct pressure can be placed upon the thorax, the pelvis being fastened by means of a strap.

TREATMENT OF LATERAL CURVATURE.[42]

Lorenz reports a method of treatment for correction of lateral curvature by the application of suspension and also lateral suspension, which consists of straps which are wound about the patient's trunk spirally, so as to exert a pull in the direction of torsion, and also in the direction of the projection of the ribs. For the application of these straps the reader must be referred to the article itself, as these vary to a certain extent according to the curve. But the theory adopted by the writer is that distortion of this character can, in certain cases, be entirely corrected by means of lateral pressure applied by these straps, the superincumbent weight being removed by suspension. The application of these straps may be used as a daily exercise. It can also be used for a complete correction of the patient, and for the application of a plaster jacket, or for the manufacture of a corset. It has been the experience of Lorenz that under these exercises improvement and correction take place.

[41] Hoffa: Zeitschrift for Orthopedic Surgery, No. 1, Section 1, p. 50.
[42] Lorenz: Zeitschrift for Orthopedic Surgery, No. 1, 1891.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY.
SUFFOLK DISTRICT.
SECTION FOR CLINICAL MEDICINE, PATHOLOGY AND HYGIENE.

ALBERT N. BLODGETT, M.D., SECRETARY.

REGULAR Meeting, Wednesday, November 18, 1891, DR. E. G. CUTLER in the chair.

REPORT ON EMERGENCY HOSPITAL.

The first business was a communication from the committee appointed to consider and report to the Society the need of an emergency hospital. That committee was not prepared to make a final report at this meeting, and asked for further time, which was granted.

REPORT OF COMMITTEE UPON THE CONDITION OF THE STREETS OF BOSTON.

Dr. V. Y. Bowditch, for the Committee on the Condition of the Streets of Boston, stated that the committee had occupied itself in interviewing, at various times through the year, both Mayor Hart and Mayor Matthews, Governor Russell, the Police Commissioners and the Superintendent of Sanitary Police. Without arrogating too much to the medical men, Dr. Bowditch believed that the action of the Suffolk District Medical Society last year, had been of great service in procuring a cleaner condition of the streets. Immediately following their action, the press had strenuously supported them and urged the necessity of greater cleanliness; and in the following autumn both candidates for the mayoralty had made the subject of special import in their messages and although there is still much room for improvement, no one can deny that the city in the business portions, at least, is much cleaner than before, the reforms being largely due to Mr. Carter, the present Supterintendent of Streets.

In all their interviews a marked cordiality has been shown to the efforts of the Committee, except by the Police Commissioners, who for some reason or other show a decided indifference to enforcing laws on the statute books for the prevention of throwing refuse into the streets by shopkeepers and others. The watering of the streets has greatly improved in the past year, doubtless due to the energetic action of Dr. H. J. Barnes, who, independently of the committee, had sent several letters to the newspapers relative to this subject. Dr. Bowditch hoped that Dr. Barnes would be added to the committee, and stated that it was their intention to pursue the same course as heretofore by interviews with various officials relative to still greater improvement in the condition of the city.

Dr. J. C. White moved the addition of Dr. Barnes to the committee, which was seconded by Dr. Knight; and he was unanimously elected.

Dr. Warren: I think the work the Society has done has had its effect, and that the condition of our streets, while far from the desired point, has been much improved. This is one of the great improvements, it seems to me, this country has got to make, not only for the comfort but for the sanitary advantage of the citizens. We expend enormous sums of money for parks, for luxurious hotels, for means of conveyance; we are making great improvement in comforts and conveniences in the way of living, and yet we are almost Chinese in the standard which we set for street engineering in this country. I do not speak of Boston so much as of other cities. I think Boston compares favorably with them, but there is still a great deal to be done. In fact, the science of road engineering is in its infancy in this country; and we want to stir continually, in order, not only to gain what is now proposed, but to spur on the authorities to educate themselves up to a much higher standard of work than they have ever aspired to before.

Dr. Barnes: I desire to say something on this subject, for it seems to me we owe to the present administration, regardless of our political affiliations, recognition of the wonderful changes it has affected in the appearance of our streets, particularly when we recall the reported interview of our committee with the municipal authorities of a former administration, where every obstacle was placed in the path of this much-needed reform.

In reviewing the report of that interview, it would seem as if all efforts had been exhausted in an endeavor to find how *not* to do the work. For years filth was allowed to accumulate between the double lines of horse-car tracks, owing to a controversy between the street railroads and the city authorities. I chanced to pass through Boylston Street last spring at the time of its removal. Piles amounting to a good horse-load, as frequent as space would permit, were scraped up for loading; and I was much surprised to observe a good stone pavement underneath, which had been hidden for years. The cross-walks are now swept; the piles of rubbish collecting in the lee of the fences of bridges and curbstones have generally been removed. Prior to this year, I often was obliged to take up from two to five bushel baskets of road detritus gathered during windy days in front of my residence; nothing of this character has annoyed me during the past season; neither have I observed the offensive odors of the streets so common a year ago.

It seems to me we can now compare our condition with that of some of the better municipalities, and not be obliged to go as far as Constantinople or even New York to find a parallel.

An appropriation of $150,000 last spring, three times the usual amount, was placed at the disposal of the Superintendent of Streets, for sprinkling, and the clouds of dust of former years, resembling a simoon in Sahara, have not been our unhappy experience. This branch of the municipal service has not as yet been placed on a good business basis, and excessive sprinkling has been noticed much of the time; but I am informed plans are being matured to systematize the work.

With the experience gained during the past year we may reasonably expect better service next year, and the establishment of an equable method of payment. The committee of the city council having this subject under consideration is composed of gentlemen in whom we may repose confidence.

While commending the present administration for what it has accomplished, we may congratulate ourselves for the influence we have exerted, for in this hall and by you, these reforms were inaugurated, and by your committee brought to the attention of the municipal authorities. And when we remember the successful labor of members of our profession, which resulted in the building of the intercepting sewerage system; the reform in milk inspection, which chiefly through us has been secured; the elimination of sources of pollution of our water-supply; and the excavation of the storage basins of the Sudbury River, which, by the way, has practically revolutionized the practice of engineers in constructive work of this character, — we have much to encourage us in persistent effort to improve the sanitary condition of our city.

Dr. Barnes presented the following motion:

Resolved: That the members of the Suffolk District Medical Society, Section for Hygiene, etc., desire to express their gratification at the improved condition of the streets of Boston, and hope the effort for improvement will be continued; that we may ultimately be able to compare their condition with the best examples in other municipalities.

Resolved: That this motion be printed in the report of this meeting.

The motion was unanimously adopted.

Dr. H. F. Vickery read a paper on

UNSUSPECTED HEART-DISEASE.[1]

DR. E. N. WHITTIER: I think we are under great obligation to Dr. Vickery for the manner in which he has brought to our attention a subject of vital importance. The physician's duty to his patient in this respect was dealt with somewhat late in the paper, but I think in a very considerate way. I have always taken the ground in dealing with my patients, that, if they could not give me under such circumstances as those of heart changes, the full assurance that they would do what I asked without asking me why I advised it, it was my duty to inform them why even at the expense of creating in their minds what in my judgment would be a warrantable degree of apprehension. I know of no greater evil in the community than that which exists in the practice of some physicians of turning loose their patients who have been for some considerable time the victims of unsuspected disease of the heart; for the unexpected in such cases is almost sure to happen. In proof of this I desire to cite a few cases from my own experience.

CASE I. A gentleman of sixty, of rather stout habit, living at some distance from the city, endeavored to transact business in the city, and was in consequence exposed to the contingencies of haste. This gentleman called upon me, and stated that he had been troubled of late with dyspepsia and some shortness of breath, on what he called proper and not unusual exertion. Examination showed that his condition was that of an advanced chronic interstitial myocarditis. There was no evidence at that time of any valvular lesion. I told him on no account was he to hasten to a train or upstairs, etc. He came to me several days later to make a confession and an admission. He had done what he had been warned not to do; had received his lesson, and he said he should in the future govern himself accordingly. He noticed a man in front of him hastening to catch the train. Somewhat stimulated by that he started on a quick walk and finally into a run, and got into the car in time to save his passage on that train. He sat down breathless. He noticed three seats in front of him the man who had hastened a little before him. His head had dropped, and he was dead. That was the confession and admission.

Three weeks ago a gentleman sixty-three years of age came into the office of the life insurance company where I am employed, having been brought there by an agent, stating that he was a man of large affairs and it was of very considerable importance to him as an agent to secure the risk. There was certainly nothing in the appearance of the gentleman to suggest the slightest objection or impediment to his having a policy placed upon his life. I took his pulse. It seemed to me a little quick. It was eighty. I have been in the habit of taking a man's pulse at the beginning and end of examination and comparing the two. He stood up after he had answered the questions in the application and then I placed my ear against his chest and immediately my hand to the wrist, because there seemed to be an accountable difference between the cardiac movements as heard and the radial pulse. There was a difference of forty ineffectual and incomplete ventricular contractions; the apex pulse was 120. This to the agent was a case of unsuspected heart-disease; to the examiner not wholly unsuspected, but without the usual warrant for so concluding; for this gentleman had told me he could go up three flights of stairs without disturbance, and for thirty-six years had not had a physician. I think Dr. Vickery is right in the statement that he made, and I wish it could be put more strongly, that the forms of heart-disease which are unsuspected, and undiscovered by some physicians, and without any apprehension on the part of the patient or his friends, are the changes which take place in the muscular structure of the heart and not in its valvular organization. For this condition it seems to me there is comparatively slight remedy. We have not that to depend upon which we have a right to depend upon in the larger percentage of organic disease of valvular origin. There can be no satisfactory benefit or improvement conferred upon the patient unless he is made to feel alive to the necssity of following to the very letter such directions as may be given. I do not agree with that man who would say, if he has a heart-disease, he does not wish to know it; nor do I agree with those friends who are unwilling to take the risk of alarming a patient by an opinion of an existing cardiac disorder or disease, admittedly of grave significance, when the opinion, if heeded, shall be conservative in its tendency and protecting in its influence; and when, unheeded, because suppressed, be so frequently the source of unavailing regrets in the unexpected and unprepared for result, sudden death from cardiac inefficiency.

DR. F. C. SHATTUCK: I merely desire to express my cordial agreement with everything the reader has said. While he was reading the last paragraph I called to mind a conversation which I had the other day with Dr. John T. Metcalfe, of New York, whom I regard as the most skilful physician I have ever known. The conversation was on this very subject. He told me of the case of a gentleman whom he went to see on Fifth Avenue, whose wife had sat at the window every afternoon for many years watching to see her husband come home from his business, not knowing whether he would come home alive or dead, and that because they had been informed that he had heart disease and was liable to sudden death. Dr. Metcalfe told the lady that her husband might outlive both of them. The next year he went to Europe, and is still alive.

DR. F. MINOT: I should like allude very briefly to two or three cases which are interesting in this connection. I have reported one of them already to this Society, in a paper on another subject. The patient was a private coachman, accustomed to a good deal of exposure to the weather and who did the usual amount of laborious work which a coachman does. He came under my care in the hospital, with pneumonia of moderate severity. On feeling his pulse I was struck with its hammer-like character, which is so diagnostic of aortic regurgitation, and which was increased when the arm was raised up. On examination of the heart the characteristic diastolic murmur was plainly audible. This patient had no rational symptom of heart-disease, and notwithstanding the regurgitation, his pneumonic symptoms were comparatively light although perfectly well marked; and he was convalescent in about seven days.

Another case is that of a gentleman who consulted me many years ago, and who knew that he had a heart-disease. He was a man of nervous temperament, rather hypochondriacal, and fidgety about the nature of his complaint. I found that he had no rational

[1] See page 693 of the Journal.

symptom whatever of cardiac disease, although there was a well-marked mitral regurgitation. I have watched the patient for ten years, and I think he is in as perfect health now, as when I first saw him.

The third case is that of a young woman whom I saw in Chelsea a few years ago, in consultation with the late Dr. D. D. Gunter. She was hemiplegic and had aphasia. I found that she had a very loud and harsh mitral regurgitant murmur. It was audible at some little distance from the patient, and was a source of considerable annoyance to her husband, by keeping him awake. In this case, I think, the hemiplegia was clearly traceable to the heart-disease, and it seems possible that if the patient had been under treatment at an earlier period, her life might have been preserved for some years longer. One very interesting thing about this case is that the hemiplegia complicated with aphasia was on the left side, but the patient was not left-handed. The patient recovered partly from the aphasia, but died shortly after from a fresh attack.

Dr. F. I. Knight: These cases of unsuspected valvular lesion are familiar to all of us who have to do with thoracic disease. I think that cases of myocarditis *are* suspected because they come to us on account of cardiac symptoms. These cases of unsuspected valvular lesion come under observation in two ways: first, in the life-insurance cases; and, secondly, we see them constantly in patients whom we have known to have had endocarditis. Of course, some of these lesions are such as are not likely ever to produce any serious effect; and certainly they go along, as a rule, until compensation fails, and when there is a failure in compensation, they make some complaint, but, as a rule, not until then.

Whether a patient should be informed of his condition or not, is, of course, often a serious question: but it seems to me that it is usually perfectly right and important to inform him of his condition in a proper manner. I must confess I have seen a good many cases where I thought it was done in a very brutal manner: where the patient has been told at the first interview that he has serious cardiac disease, and is liable to drop down any minute. But a patient can be informed that he has some affection of the heart with which he will probably go along many years with care. I have seen recently an illustration of that brutal way of putting things, which, however, was not a case of heart-disease. A gentleman, about thirty years of age, consulted his family physician, and was sent to another physician here for consultation, who wrote a letter announcing that he had serious tubercular disease both of the larynx and lungs, and that it was an utterly hopeless case, and the only thing to do was to make him comfortable for the few months left him to live. This gentleman was in what he himself considered to be a very good physical condition. He did not suspect that he had serious disease at all. He asked the family physician what the doctor in Boston had written about him. This gentleman takes the letter out of his pocket, and throws it over for him to read. He reads it, and comes up with it to me, and asks me what I think about it. Now it seems to me that that way of dealing with a patient, even if there is not much hope, is very brutal. That same method of dealing with patients I have seen several times in cardiac cases, where I think it did an immense amount of harm, where a more proper way of putting the thing would have done the patient good instead of injury.

Dr. V. Y. Bowditch: I am glad to have the opportunity of emphasizing the remarks of Dr. Knight with reference to speaking to our patients in whom we have found symptoms of disease. I agree with Dr. Whittier that it is of a great deal of importance to let the patient know he must avoid certain things; but, on the other hand, I think we must use the greatest care not to alarm him too much. I have seen too much of that sort of thing in people who have been told that they had serious heart-disease. We cannot be too careful, moreover, about explaining to the patients the difference between functional and organic disease. There are certain gentlemen who examine young men with reference to their ability to go into athletics. Some of them are doubtless capable of judging whether a man has the nervous build to enable him to go into athletics to a great extent. There are a good many young fellows of rather a neurotic temperament whose hearts, when they take violent exercise, behave in a way that would be serious if not controlled. Cases have come to me where they have been told by some one that they had serious disease of the heart, and they have been made most unhappy thereby. On examination I could find not the slightest evidence of organic disease, but some nervous irregularity. I do not, of course, wish to be understood as saying that it is wrong to speak to a patient about heart-disease at all. On the contrary, I think we can wisely advise a patient, but it seems to me we must use the greatest care in the way we do it.

Dr. A. N. Blodgett: In regard to informing patients as to their condition under circumstances of cardiac disease, I have found invariably that a careful and considerate communication to them of the condition of the heart, which renders it necessary for them to be cautious in what they do, can be made without exciting unnecessary alarm. I make it a point to tell them there is very little which they cannot do as well as other people, but that they must do it more carefully. I caution them against hurrying for trains or going up stairs quickly, or in any other way calling upon the weakened heart for extraordinary or sudden increase of work. I assure them that otherwise they can do almost anything which other people do, and may confidently look forward to a comfortable and happy life. I have not observed any ill effects from communicating in this manner the serious nature of the disease to the patient.

Dr. H. F. Vickery: In the first place, I should agree most fully as to what has been said about the manner in which patients should be informed. My words were, "A sensible patient properly advised as to his physical limitations may be able to lead a long, happy and useful life, whereas unwarned he may soon collapse"; and that is what I firmly believe. I believe there might be exceptions to that. The patient, for instance, may not be a sensible patient. If you tell some patients the truth about anything, the cerebrum does not get the truth.

As for being afraid to speak about heart-disease to a patient because the laity object to that term, I do not know whether I quite agree with that as a reason, because I suppose the reason the laity now are so afraid of heart-disease is that doctors were fifty years ago; and I live in hopes that patients in time will begin to think that pain in the back does not mean Bright's disease, that a tumor is not necessarily a cancer, that heart-disease is not inconsistent with a happy and useful life.

I did not mean to bring up treatment; but the point I want to make, and I think all have agreed to that, is that unless you examine you are not in a position to tell even those you ought to, and you cannot direct the patients rightly, if they have this trouble, in such cases as do not present rational symptoms.

DR. MALCOLM STORER read a paper on

A SUCCESSFUL CASE OF DOUBLE OVARIOTOMY.[2]

DR. CUSHING: I do not know that the paper calls for anything but flattering comments. The description is accurate. I think it is rather rare nowadays, that we find simple tumors which can be removed through a small opening by puncture. They are, in my experience, rather rare and very gratifying to get. The return of hæmorrhage from the uterus soon after operation is a very common, and as far as I know a very favorable symptom. It is one I always like to hear of. Whether it lessens the pelvic congestion, or for what reason, I do not know, but patients who have this hæmorrhage, called metrostaxis, go on well usually.

PATHOLOGICAL SPECIMENS.

DR. E. W. CUSHING: I have brought the following specimens, which I have removed within the last fortnight.

First, two ovarian cystomata. One is interesting as occurring in a woman sixty-nine years old, who had always been healthy until something less than a year ago, when she first noticed this growth, which increased rapidly. As you see, it is largely solid, and not all the fluid could be removed by the trocar; possibly, a gallon was thus evacuated. The broad pedicle was secured in three sections. Irrigation, drainage-tube, and an uneventful recovery.

The second specimen is from a patient sent by Dr. Junkins, of Greenland, N. H. It is a papillomatous cyst. It is interesting from the fact that, about two weeks before the operation, the patient, in rising to leave a railway car, was thrown against the seat in front of her, and probably ruptured the cyst; she was seized with violent pains and symptoms of shock, but rallied, and was able to come to the city for operation. On opening the abdomen a large amount of free peritoneal fluid was found, and a great many adhesions. The fluid being evacuated, and the cyst enucleated, it was found that there was a multitude of minute papillomatous excrescences on the intestines, uterus and omentum; a considerable portion of the omentum was amputated, in order to remove the chief focus of the new growth. Irrigation and glass drainage. Convalescence uninterrupted. The future course of this case will be awaited with a great deal of interest, to see whether the minute papillomata, which are scattered over the abdominal organs will continue to grow or will wither. This is a question on which little is written or known. In some cases, certainly, papillomatous growths continue to occur, but these may be cases where the original disease had penetrated so far between the folds of the broad ligament that the whole of the new growth was not extirpated at the time of operation. On the other hand, there is no doubt that minute papillomatous grafts on the abdominal viscera may be so encapsulated by an adhesive peritonitis that their progress is arrested. I had such a case more than a year ago, where, besides the ovarian tumor, which was removed, there were multitudes of little grafts, presumably due to a previous rupture of the sac; these little vegetations, however, were surrounded with adhesive peritoneal coverings, so that they were apparently not growing, and the patient is now quite well, more than a year after the operation. The two tumors here shown display very well the two chief varieties of ovarian tumor, namely, multilocular cyst (some parts of which form a practically solid growth), and the mono-cyst, lined with papillary vegetations.

I have next to show two specimens of cancerous uterus removed by vaginal hysterectomy: there should have been three, but the third, by some accident, was not brought here. There is nothing very peculiar about these specimens, but it is interesting to see how high the disease extends in the cervix, even where inspection before operation would make us think that the disease is quite limited. You will observe that the upper border of the carcinomatous nodule is in both cases above the level of the entrance of the uterine artery; to remove the disease by high amputation, it would therefore be necessary to separate the bladder in front, and to open Douglas's pouch behind, and to secure the uterine arteries on each side; when this has been done, it is a slight matter to remove the fundus also. Any other course involves the risk of leaving a portion of the disease behind, the presence of which cannot be detected before or during the operation. All these patients recovered without accident. I have now performed vaginal hysterectomy twenty-nine times; and all the cases recovered from the immediate effects of the operation except two, where I had operated at a distance from the city, and did not see the patients after the operation. A large proportion of these patients remain in excellent health; one has just been married.

The next specimen which I shall show is one of large ovarian abscesses and pus-tubes from a patient who had suffered for some years from recurrent pelvic inflammation of great severity. The mass on the left was as large as two fists, and that on the right about the size and shape of a large lemon. The pus-sac ruptured in delivering it; the pedicles were secured by catgut, as is my custom in all unclean cases. Irrigation, glass drainage, and prompt recovery.

The last specimen is from a woman of thirty, who had never menstruated, but who had suffered intolerable pain every month. On the right the ovary was enlarged and diseased; the tube, however, was extremely slender and imperfectly developed, and did not enter the uterus but seemed to be lost in the broad ligament. On the left, the tube was normal, but the ovary was quite undeveloped, occupying a space as large as a finger-nail and not over one-eighth of an inch in thickness. Both ovaries and tubes were removed. No drainage. Recovery.[3]

SOMETHING ONE GETS IN GERMANY. — There are a great many different inducements for making a trip to Europe. *The College and Clinical Record* states that Professor Parvin, while in Germany, last summer, secured a large number of female sexual organs for use on his obstetrical model. There was no duty paid, and we trust it will not be necessary to apply the principles of protection to this singular industry.

[2] See page 699 of the Journal.

[3] December 7th. All the above patients are doing well, having recovered without accident.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY.

CHARLES L. SCUDDER, M.D., SECRETARY.

Regular meeting, Wednesday, November 4, 1891, Dr. A. T. Cabot in the chair.

Dr. Francis S. Watson reported

OPERATIONS DONE FOR RADICAL CURE OF HYDROCELE AND INGUINAL HERNIA,[1]

performed at the same time on a patient forty-seven years old.

Dr. S. J. Mixter reported

TWO CASES OF APPENDICITIS, ONE ASSOCIATED WITH UTERINE FIBROID, THE OTHER WITH PREGNANCY.[2]

Dr. H. L. Burrell: The packing with gauze, I fancy, was to secure drainage. I would like to ask how often that was changed.

Dr. Mixter considered the use of iodoform gauze as packing in cases of operation for the relief of abdominal abscess from whatever cause, where the inflamed or suppurating tissues could not be entirely removed, was the best method known for preventing an infection of the general peritoneal cavity. The method first described by Mickulicz, was the one he generally used, small strips of gauze being packed into a large handkerchief of gauze, which is first pushed to the bottom of the cavity. This prevents small fragments of packing being left in the wound. In a few hours the general abdominal cavity is walled off, and the abscess may be treated as in any other part of the body. After the removal of abdominal tumors with extensive adhesions, this method is often more sure to prevent hæmorrhage and sepsis than the use of a drainage-tube.

Dr. W. M. Conant presented

CASES SHOWING SATISFACTORY RESULTS OF TENDON AND NERVE SUTURE AFTER INJURY.

Dr. Mixter: I must say in regard to the method of temporary fixation of the upper end of the tendon to be sutured, that I was not the one who suggested it.

Professor Nicolaidoni, of Vienna, showed me eleven years ago, how and when it could be used. He used either a needle or temporary stitch to be left in for two or three days.

The temporary stitch I always use when it is possible, and in addition I employ a device which I believe has not been described, and which avoids the tearing and bruising of the cut end and also renders unnecessary the slitting up of the tendon sheaths with the probability of subsequent adhesions.

The method of procedure is this: pass a director or probe up the sheath until its point is well above the cut end, cut down onto the point, and draw the tendon out through the small opening thus made. A temporary stitch of strong silk can then be passed through the tendon well above its cut end, and silk and tendon are then drawn down through the sheath and out of the original wound, the thread being tied to the probe. The stitch for temporary fixation can be put in at the upper opening, and, the ends being united in the usual manner, the silk used for drawing down the tendon is withdrawn. I have used this method in a considerable number of cases, and I am sure that the results obtained have been better than could have been expected had the tendons been bruised or their sheaths slit up.

Dr. Gay: I think the importance of this subject cannot be exaggerated. I remember one case of a piano player who received a cut across the back of his left hand by a broken window. The result was at the end of six weeks when he came to me, he had complete loss of extension of his fingers, which meant, of course, his living. I told him I would make an effort to pick up those tendons, and I did so. The result was he got a very good hand. At the end of six or seven weeks after the injury those tendons were hard to find. They seemed to be atrophied. One or two seemed to be merely a string, but he got good use of all his fingers, and without suppuration.

Another case: A man was washing his foot in a bowl. The bowl broke and let his foot through, severing the tendo Achillis. That was sewed with catgut, and now at the end of six months, he has almost complete use of the foot. The extension of the tendo Achillis is not quite so free as on the other foot, but practically he has a very good one.

I think it is a matter of a good deal of importance, and I think the effort should always be made to sew the ends of severed tendons together.

Dr. Monks: I should like to ask Dr. Conant what he means by sewing the tendons together, *en masse*.

Dr. Conant: In this special instance I had no trouble at all in separating the sublimis tendons from the profundus, and having caught the ends of the sublimis tendon and the muscular portion together, I passed quilted sutures and united the whole thing without any attempt to separate them; and the profundus the same way, only they were deeper and the rupture very much lower down, and they were part tendons and part muscles, and I picked the whole thing up and sutured them all at once, running the stitch,— usually if you dissect carefully enough out, you can get bundles of muscles for each one of the tendons. What I meant by *en masse* was, I did not attempt to suture the tendon to its corresponding muscle, but swept down and picked up the whole mass of muscles and sutured the tendons without respect to whether it should have gone to the outer or inner side. It is more the idea of getting firm union than any attempt to get special individual motion from each tendon.

Dr. Cabot: I had a case this summer which is interesting in connection with this subject as showing the rapidity with which nerve function is recovered. I sutured a median nerve that had been separated for months, where there had been complete loss of sensation through the median distribution. The ends were found, the bulbous portions cut off and the nerve sutured. The interesting point was that sensation began to return in the fingers already at the end of four days.

In regard to the restoration of tendons in which there has been non-union, I had an experience years ago which I think is valuable.

A man came into the hospital with a rupture of the ligamentum patellæ. He could not straighten his leg or walk upstairs. There was a deep sulcus below the patella, where the prominent band of ligament should be. Acting on the experience gained in cases of non-union of bone, his leg was put straight on a splint,

[1] See page 698 of the Journal.
[2] See page 697 of the Journal.

the patella was drawn down into place, and blisters were applied over the depression where the ligamentum patellæ should have been. After the second blister the depression was filled with plastic lymph, so that there was no longer a sulcus, and ultimately that plastic lymph led to a restoration of the tendon. The man was afterwards able to walk upstairs, and could lift his leg.

In small tendons like those at the wrist and ankle, such a course would probably be of little use, but in large tendons like the tendo Achillis, if that were lengthened by non-union, it seems to me such treatment might cause it to be reformed perhaps. Certainly, it answered well in the ligamentum patellæ.

DR. J. C. MUNRO showed

A CASE OF GASTROSTOMY FOR MALIGNANT DISEASE OF THE ŒSOPHAGUS.

The patient is fifty years old; of a healthy family; a wool teamster; always healthy; not alcoholic or venereal. Dyspepsia for two years before present trouble, which began about August 1st of present year, with difficulty in swallowing solids. Two weeks later only soft solids and liquids could be taken. Pain at this time between scapulæ. Loss of flesh. Two or three days before entrance to Carney Hospital (September 14th) could not swallow liquids. Œsophageal bougies stopped at thirteen inches from upper incisors.

Next day (September 15th), Drs. M. F. Gavin, J. J. Minot, F. W. Johnson, and P. Thorndike being present, an opening two inches long was made in the left hypochondrium; the stomach identified, especially by the gastro-phrenic ligament; a portion at the cardiac end drawn out and stitched to wall by heavy silk loops, silver guys having been passed through the outer layers first of all. Very little shock from operation. On following day an opening was made large enough to admit a No. 18 F. soft rubber catheter, which has been worn since. Feeding by the stomach was immediately started, and enemata continued.

For two days the temperature ranged between 99° and 100°, and the pulse between 80 and 90, then both fell to the normal and remained there. The stitches were removed after a week: no pus. Patient up and dressed after removal of stitches.

October 9th. Patient began losing ground although taking and digesting abundant nourishment.

October 20th. While coughing raised blood, evidently from the œsophagus.

October 30th. Cough distressing and persistent. Rusty sputa. Lungs negative. Losing weight and strength. No leakage beside the tube; no excoriation.

November 3d. Steadily losing ground. Cough continues, with bloody sputum, but less severe than before. Pulse irregular and intermittent. Up and about ward most of the day. Complains of pain between scapulæ. Takes two ounces every two hours by stomach, in addition to enemata.

Has been able at times since operation to swallow a very small quantity of water, but has ceased trying to do so lately on account of the vomiting (œsophageal) and coughing excited.

DR. MIXTER: I have seen several gastrostomies, but have never seen one where the result was as good as in this case, as far as the retaining of the food that was put in through the tube. There has been almost no leaking. When I returned some days after the operation, the patient was perfectly comfortable, was being fed; and a week from the time of the operation I found him walking around the yard, clothes on, and the stitches having been taken out the day before. He was perfectly comfortable, and had gained very much from the operation. Of course, now, he has lost very much in flesh and strength, but at that time one certainly could ask no better result from any operation.

DR. GAY: I would like to ask how far it was from the abdominal parietes to the stomach, how much dragging was necessary to bring the stomach in contact with the abdominal walls?

DR. MUNRO: Very little. He was emaciated.

DR. GAY: In the case I had a few years ago, it was five inches I had to draw the stomach up before I could get it in contact with the abdominal walls. There was a good deal of strain upon the stitches. We had no trouble for a fortnight. Then the stitches gave way. He was in a very much worse condition than Dr. Munro's patient. He was bed-ridden. He got relief for about three weeks, and then began to fail, and died in the course of a month or six weeks. I would like to ask if there was any obstacle to intubation in this case?

DR. MUNRO: We had no œsophageal tube, otherwise I should have tried it, although the smallest bougie would not pass, but came up against a hard surface thirteen inches from the upper incisors, and I should not have felt authorized in forcing a passage.

DR. BURRELL reported

A CASE OF GASTROSTOMY,[3]

done at the Children's Hospital.

DR. MUNRO: I think the question of the gastro-phrenic ligament is a pretty important one. I have been careful to examine for this ligament in the subjects at the dissecting-room, and where it is present it is very marked. In Dr. Burrell's case I was not able to recognize it, simply because my finger would not reach it on account of the distension of the abdomen. It, to me, is one of the best guides to the stomach. The transverse colon has been sewed to the abdominal wall in several instances; but I don't see how, with a guide like this and with the left gastro-epiploic artery also, a person could make a mistake. A point that helped me the following day was the wire guys. The wound was a very blind one, and it was pretty hard to see where the knife ought to be plunged in, but with these guys I could easily get my bearings.

DRS. W. H. PRESCOTT and J. E. GOLDTHWAIT reported

RESULTS OBTAINED IN 531 CASES OF INTUBATION AND TRACHEOTOMY.[4]

DR. GAY: I think we have reason to feel greatly indebted to Drs. Prescott and Goldthwait for continuing the records so ably commenced by Drs. Lovett and Munro. The last series of cases, the cases reported to-night, are not so valuable for the sake of comparing the value of the two operations as the cases in which tracheotomy was the only operation, and those in which intubation was the only operation. I mean taking the cases before intubation was put into general use, and compare those with the cases of intubation, say for two or three years after intubation was introduced. In a paper which I read some years ago, the percentage there was a little in favor of tracheotomy,

[3] Publication deferred.
[4] See page 694 of the Journal.

but there was not a very great deal of difference, and those were pretty fair cases for comparison, so far as could be judged. The type of the disease was very much the same in the two series, taking them altogether. I think I am right in saying the feeling at the City Hospital, among the older men particularly, is in favor of trying intubation at first. Speaking generally, it is much more easily done. The parents give their consent more readily, and, I think, the surgeon feels like doing intubation when he would not feel like resorting to tracheotomy. I think I should place intubation first on the list, and if it worked well, I would depend upon it. If it did not, I would resort to tracheotomy. I think, perhaps, tracheotomy will do everything intubation will, and perhaps more. I fancy it will save some cases that intubation will not; at any rate, a certain number of cases get saved with intubation as well as by tracheotomy. I think intubation is a most admirable operation, and in the lighter cases it succeeds very well indeed. It should be remembered that the type of the disease, more than anything else, determines the result.

Dr. Conant: I am very much interested in this subject, not that I know much about either intubation or tracheotomy from actual experience. I have done both a few times. I looked the subject up last year, and I am interested to hear this set of cases that has been so ably worked up. The thing that strikes me at the outset is the difference in percentages. Of the 531 cases we find 96 recoveries, or only 18 per cent. That does not compare favorably with Drs. Lovett's and Munro's, or with several other men, and I do not know exactly how to account for it, unless we are willing to admit that the operation of intubation is oftentimes performed when tracheotomy ought to be. Since intubation has been introduced, I think there is no question that oftentimes cases have been intubated where tracheotomy ought to have been done. The trouble that I have seen after intubation has been the inability of the average nurse to keep the tube clear. I have always felt that I must be within easy call, or else the tube might be coughed out and the child suffocate. I have felt for a considerable time that the operation for intubation, which at the time it came out was claimed to have a percentage very much larger of recoveries than tracheotomy, was a thing which later on would prove to be fallacious, and the more cases of intubation that are reported the less has grown the percentage of recoveries. In the paper which Dr. Gay speaks of the percentages were very nearly on a par with those of Dr. Lovett. Previous to Dr. Gay's paper the percentages had been larger. In this set of cases the percentage is only 20 per cent., and the combined method, so to speak, only 18 per cent.

Dr. Lovett: The question of intubation is one with which I have had some little practical experience. Does Dr. Prescott know about the cases in the last year, whether the death-rate has been higher than before.

Dr. Prescott: Up to January, 1890, the per cent. of recovery was about twenty to twenty-five, and then it fell to fifteen.

Dr. Lovett: With regard to the secondary operation of tracheotomy after intubation, it is a pretty severe case that requires it. After intubation is done, if it does not give relief, it must mean necessarily that either pneumonia has come on or that an extension of the membrane has taken place into the bronchi, and, of course, in cases of that sort it is a poor outlook for tracheotomy, as death is practically sure under any circumstances. In Dr. Prescott's cases there were only five out of fifty or sixty that recovered where tracheotomy was secondary. In my own experience I do not remember a secondary tracheotomy after intubation that has recovered. In the tracheotomy case there is a good deal of discharge for the first five or six days, of mucus and detritus from the membrane, which comes out of the trachea tube in great quantity. In intubation cases that discharge goes somewhere or other, but does not appear externally; it may be swallowed, but a large part is probably drawn into the bronchi. It has seemed to me in the cases I have watched that the percentage of pneumonia in intubation cases was high. I have for the last two or three months had the house officers watch the cases very carefully in that regard, and in a majority of the cases they have reported to me that pneumonia was beginning or progressing. I saw a case dying last Sunday at the City Hospital, which was characteristic. The respiration was 80; there was no particular cyanosis, but shallow breathing, and the upper lobe of one lung was filled up.

If the cases of intubation are compared with the cases of tracheotomy previous to intubation, we have about the same number. Our percentage of tracheotomy recoveries was about 29; and here in 392 cases of intubation the percentage is nine lower. I am very sure that in the last year the percentage of intubation would be still more unfavorable. What the cause of that is I certainly am not competent to say but my experience in the last month has been much worse than ever before, and it seems to me it will be of interest to perform tracheotomy alone as a primary operation for a little while in the hope of again comparing the two operations. It seems to me that the disappearance, in intubation cases, of all the discharge and the detritus that comes out of the tracheotomy tubes is a very significant matter.

Dr. Cabot: There is one point I spoke of when intubation first came out, which I think is worth considering when selecting the proper operation. In a case of diphtheria just beginning to affect the larynx, you have a septic disease which has not extended to any appreciable degree below the larynx. Its extension to the deeper parts is greatly favored by the passage of the inspired air, carrying the secretions down with it. If you put in an intubation tube, and these commencing cases are ones in which you would be likely to use intubation, the air that that patient breathes is still entering the lungs through the mouth and throat infected with diphtheria. If, however, at that time, with the disease mainly above the larynx, a tracheotomy tube is introduced below the larynx, the air enters the lungs comparatively free from these diphtheria germs and secretions; so that it seems to me that this suggestion of Dr. Lovett's, that for a while it would be well to give tracheotomy in early cases another fair trial, is a good one. It would be interesting to see whether the tracheotomies would show any better results in these early cases than intubations.

Dr. Prescott: As to whether early tracheotomies show better results than early intubations, I cannot tell, except as Dr. Lovett's paper has reported the operations done on the first day as better than on the fourth day, falling from 38 per cent. of recoveries on

the first day to about 14 per cent. on the fourth day; and in the statistics that were reported here to-night the operations done on the first day were only 20 per cent. and the operation done on the third day were 45 per cent. But I think there is a source of error or misunderstanding in these two statistics, in that the time of operation as we took it was after the appearance of laryngeal symptoms. As it was reported in Dr. Lovett's paper, it was the time after urgent dyspnœa had appeared. That makes some difference. Whether it shows that the cases that were intubed were more severe cases, what are described as fulminating cases or not, I don't know; but that is the difference in the two series of statistics as regards the time of operation.

DR. GOLDTHWAIT: I would like to call attention to this table. The series of tracheotomies which covers the same time collected by Romme, show 38.8 per cent. recoveries, and in the series reported by Drs. Lovett and Monro there were 28 per cent. The average of those two would make the per cent. very similar to the per cent. of intubation as it stands there. Why the per cent. of recoveries in the City Hospital cases is so small I cannot say. Cases, of course, are brought there as the last resort. Many of them are in a moribund condition and the tube is put in to let them die easy; and that is one of the great satisfactions of the operation.

It seems to me there is another class of cases in which intubation is the better of the two operations, the class in which there is a great deal of œdema of the larynx, in which the tube is inserted, and seems to squeeze out the œdema, and is coughed out in a few hours, and this is the end of the intubation.

Different authors in writing upon intubation have spoken of ulceration of the larynx as being common. There has not been a case of this that we know of; and out of the 80 cases that recovered there have been, I think, 35 cases found, and seen at least eighteen months from the time of the operation, with a perfect voice and no symptoms which would indicate in the least any ulcerative process which would impede the use of the vocal cords.

DR. PRESCOTT: Dr. Lovett has spoken of the cases of secondary tracheotomy after intubation, and that he has never seen a case recover. I think it is right that the three cases that recovered in the 36 secondary operations should be a little more elaborated. In one of the cases the tube was put in and coughed out within a few hours. No attempt was made to replace it. Tracheotomy was done in twenty-four hours, and the patient went from bad to worse, finally stopped breathing; the heart had stopped and preparations were made to lay the child out. Upon removing the sheet, the child was again breathing.

The second case was one in which the child had been intubed eleven times and coughed out the tube. Before the doctor could get there she had stopped breathing, and immediate tracheotomy was done without attempting to pass the tube. The child is still wearing a tracheotomy tube, it being now eighteen months after the tracheotomy.

The third case was the case of a young Italian who had been intubed a number of times. The relief to the dyspnœa was perfect, but the child did not seem to be able to retain the tube more than a few hours, or at most, a day at a time. Once it coughed out the tube, and during a temporary absence of the senior who had done the previous intubation, the junior attempted to do the intubation. The child stopped breathing, and immediate tracheotomy was done. The tube was worn some time and then an attempt was made to take it out. It could not be taken out. The minute it was taken out the child stopped breathing, and finally an intubation tube was again passed. The tracheotomy wound healed, the child wore the tube a few days, and finally the tube was removed and the child was discharged well.

Those are the three cases that have recovered after the secondary operation, and it seems to me they are in reality not recoveries after a secondary operation. The secondary operation was not needed except for an emergency and we have nothing to show that two of them, at any rate, would not have recovered just as well if they had been intubed as if they had been tracheotomized.

Recent Literature.

Text-Book of Ophthalmoscopy. By EDWARD G. LORING, M.D., edited by FRANCIS B. LORING, M.D. Part II. Diseases of the Retina, Optic Nerve, and Choroid, their Varieties and their Complications. pp. 260. New York: D. Appleton & Co. 1891.

The appearance of the second volume of Dr. Loring's very valuable text-book on ophthalmoscopy, will call to the minds of many a feeling of deep regret at the death of its learned author. The first volume published some years since has never been equalled by any text-book or monograph upon the subject matter, the ophthalmoscopic appearances of the normal eye. Much was therefore expected of the present volume. Nor is the second volume disappointing. It has not the completeness and rounded character of the first volume, which it would no doubt have had if the author had lived to put it into the form which seemed to him best upon reviewing the matter. Nevertheless, put together as the book is from unrevised copy and note-books, it possesses all the clearness and interest of the first volume, and makes the best text-book upon ophthalmoscopy existing in the English language. Dr. F. B. Loring is to be credited with most excellent judgment in compiling the book from the author's scattered memoranda.

Text-Book of Comparative Anatomy. By DR. ARNOLD LANG, Professor of Zoology in the University of Zurich. With preface to the English translation, by DR. ERNST HAECKEL. Translated into English by HENRY M. BERNARD, M.A., and MATILDA BERNARD. Part I. London and New York: Macmillan & Co. 1891.

The volume before us is only the first part of this important work. As it carries us no further than the arthropoda, it contains comparatively little that could be properly discussed in a medical journal. While waiting for the future part that shall treat of more familiar animal forms, we shall say only that the work seems very well adapted for teaching, as far as the actual descriptions are concerned. It is profusely illustrated with really admirable cuts, a few of which are colored. The paper and type are correspondingly good.

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ANNUS MEDICUS MDCCCXCI.

THE past year has been much less prolific in material for an Annus Medicus than its predecessor. Both the excitement aroused by Koch's tuberculin and the epidemic of influenza were legacies from the previous year. Other epidemics were less common than usual. Medical meetings were largely confined to individual countries, the principal exception being the Seventh International Congress of Hygiene and Demography which met in London, in August.

EPIDEMICS.

The only epidemic disease which has assumed prominence during the year has been influenza or the "grippe." At the close of 1890 it had traversed the earth and appeared to be dying out except perhaps in China. In January and February several districts in Asia were visited. In China the disease became a fatal epidemic. In March it reappeared with much energy in Chicago, in New York and several cities in the United States. In April the death-rate of the State of New York rose to thirty per thousand, the great rise being due to the diseases of the respiratory organs, secondary to the grippe. The course of the epidemic was perhaps more erratic than in 1890, since this year neighboring towns and States were very differently affected. Boston suffered very little, its death-rate hardly rose at all, while other cities in New England were not so fortunate. During the spring, England passed through a very serious epidemic of influenza. Appearing in Sheffield during the first half of April it spread over the island, increasing in severity until well into June. More deaths were recorded as due to the disease during the first week in May than in any week in 1890. In some of the cities the death-rate rose to over forty. A few places on the Continent of Europe reported outbreaks but no country suffered to the same extent as did Great Britain. In May, we find reports of serious outbreaks in Norway, Southern Russia, Alaska, Egypt and parts of Germany.

During the summer influenza was reported from Spain and Portugal, and in September it broke out with great energy in Australia. In October it took a fresh start in Europe. It apparently revived in several places at about the same time and from these foci spread to adjacent districts, but not with anything like the rapidity which marked its progress in 1889. The east of Scotland and the west of England were the centres in Great Britain. In November many parts of France reported severe outbreaks, the death-rate in Paris rose suddenly, while some of the cities of northern Germany were visited as severely as in 1889, and in Russia it existed in nearly all parts of the country. A little later it appeared in Vienna. During the first half of December it spread and increased in severity in most northern European countries, the principal centres being Hamburg, Berlin and St. Petersburg, and rumors of its existence were heard in the United States. By the middle of the month no doubt remained of its wide distribution in this country.

By the first of the year cholera had disappeared from Europe, and did not reappear during 1891. In May, it was reported that there was none in the Ottoman Empire. In June, it reappeared in Aleppo in Syria, undoubtedly a reproduction of the epidemic of last year. On July 11th, a few days before the commencement of religious ceremonies in Mecca, it appeared among the pilgrims, and continued until they dispersed. From 1881 to 1891, cholera has prevailed five times in the Hedjaz, and each time it was previously declared at the Red Sea ports in Egypt. It appears to be imported by pilgrim vessels plying between Bombay and the quarantine station at Cameran. The eastern epidemic, during the summer months, spread to Antioch and Alexandretta. In August, it had disappeared from the Hedjaz, but the Aleppo epidemic continued well into October, spreading to Damascus and Hodeida. In September, cholera was reported epidemic in Amoy, China. In Calcutta there were more deaths than usual.

Yellow fever has not visited the United States during the year. It appeared in Rio Janeiro in the spring, and continued during the summer and into the autumn, at which time it was reported as worse at Santos and in other Brazilian towns than in Rio Janeiro. As late as December the disease was reported as epidemic in different districts. In the West Indies, the disease was about as prevalent as usual in the middle of the summer. The port of Vera Cruz was also infected.

Typhoid fever pursued about the same course as usual during the year. In Italy, Florence was attacked by a severe epidemic during the first weeks of the year. In this vicinity, Wakefield, Mass., and Valley Falls, R. I., suffered from slight epidemics.

In January, on account of an epidemic of small-pox in the northern part of Mexico, a quarantine was established along the Rio Grande. Later, in the autumn, certain provinces in Canada reported a large

number of cases. In Russia it broke out with severity in the famine-striken districts. With these exceptions and a few isolated cases, the disease has not attracted particular attention during the year.

MEDICAL LEGISLATION.

Among the laws passed during the year, of interest to the medical profession, we may mention the following: The Immigration Law passed by the last Congress requires medical inspection of all immigrants on arrival. All idiots, insane people, paupers, or persons likely to become a public charge, or persons suffering from a loathsome, dangerous, contagious disease, as well as felons and assisted persons, are to be sent back to the country from which they came.

Congress has also passed an act establishing five stations for the inspection of meat which is destined to be exported. The principal duty of the inspector appears to be to hunt for trichinæ.

The State of Alabama has passed a law requiring all physicians who are not graduates of a reputable medical college to obtain a certificate of qualification from a board of medical examiners.

The State of Arkansas has passed a law allowing the Board of Medical Examiners, after trial, to revoke the license to practice of a physician, if convicted of unprofessional conduct.

The State of Nebraska has passed a law requiring a certificate from the State Board of Health and graduation from a legally chartered medical school or college, before a license to practice is allowed.

Among the States in which bills, regulating the practice of medicine have been defeated, may be mentioned Massachusetts, Rhode Island and Pennsylvania. The latter State has already a registry law. Massachusetts is now one of five States only in which the practice of medicine is unrestricted by law.

The New York State medical practice law passed during the preceding year went into effect. It provides that no one shall practice medicine in the State without previously obtaining a license from the State Board of Medical Examiners.

In Massachusetts a law was passed requiring the detention of inmates of State penal and charitable institutions who are suffering from syphilis in a contagious form, until the disease is no longer contagious.

The State of Maine requires all persons having charge of an infant with sore eyes to report the fact to a physician. It has also passed a law to provide for the registration of vital statistics.

In Massachusetts an attempt was made to restrict the use of arsenic in the manufacture of various articles, but it resulted merely in prohibiting its use in children's toys and confectionery.

The United States Supreme Court has decided that a court may not order a medical examination of a person in a civil case against his or her will.

The Municipal Court of Boston has decided that a druggist may sell cigars on Sunday, as a drug to be used for the cure of catarrh.

NEW METHODS OF TREATING TUBERCULOSIS.

At the beginning of the year the whole medical world was in an extraordinary condition of excitement over the recent publications of Prof. Robert Koch, of Berlin. In almost all of the large hospitals of the world tuberculin was injected into patients suffering from tuberculous disease. The most peculiar phase of the excitement was the readiness with which a large number of physicians believed that they could see great improvement in the patients under treatment. Already in February many observers were beginning to doubt the great therapeutic value of the new remedy. This feeling of doubt was much strengthened by an adverse criticism by Professor Virchow, on February 11th; and from this time on the excitement steadily subsided, and in the majority of cities the treatment was suspended. In Berlin, however, a large number of cases continued to be injected with tuberculin. Towards the first of the summer those who were still using tuberculin became convinced that the reaction observed after injection of the fluid was undesirable, and they began to give it in smaller doses. The fluid was analyzed by Hunter, Cheyne, Klebs and others, who separated from the complex tuberculin different substances which appeared to have different therapeutic action. In October, Koch himself described a process by which he separated what he considered the active principle of the fluid. At present, it must be said that the therapeutic value of tuberculin is still unknown, and that a long time and much work must elapse before its true value is settled.

On account, undoubtedly, of the interest taken in the therapeutics of tuberculosis, a large number of methods for the cure of consumption were published during the year. Liebreich proposed the use of cantharidate of potash subcutaneously. By this method several observers in Berlin obtained results as striking as those obtained by tuberculin.

In France, Professor Germain Sée advised treatment of pulmonary tuberculosis by the continued inhalation of air under pressure, containing creasote and eucalyptol. Bernheim, Picq and Bertin suggested the injection of goat's blood, and Hericourt and Richet the injection of blood serum of the dog, both of these animals being naturally immune to the disease. Later M. Lannelongue published an account of his method of deep local injections of solutions of chloride of zinc outside of, and around the spreading edge of tuberculous tissue.

Diamantberger, Picot, Weil and others advocated the subcutaneous injection of iodoform, guaiacol and other agents, in sterilized olive oil.

In this country, injections of gold and manganese were suggested by White, iodoform by Gibbes and Shurley, and vaccine lymph by Tyndale.

MISCELLANY.

In connection with the study of the biology and chemistry of the lower animals, the investigation of natural and acquired immunity in infectious disease, may almost be said to have developed during the year. It is impossible in the limits of this review to do more than mention the subject; but we may call attention to the researches of Brieger and Fränkel on acquired immunity in diphtheria, of Behring and Kitasato in tetanus, of Hankin, Ogata and Wooldbridge in anthrax, and of Vassale, Montanari and G. and F. Klemperer in pneumonia. It is surely not unreasonable to hope that important therapeutic gain may ultimately result from these and similar investigations.

As most civilized countries take a census on decennial years, the results became known during the past year. The population of the United States amounts to about 63,000,000, an increase of over 12,000,000 during the past decade. The population of the United Kingdom is about 37,000,000. Ireland has less than 5,000,000, and London, including the outer ring, 5,600,000. Canada counted only 4,800,000, an increase of one-half a million during the last ten years. France a little over 38,000,000, and Germany 49,000,000. A recent estimation of the population of the earth for this year is 1,480,000,000.

On October 13th, Prof. Rudolf Virchow celebrated his seventieth birthday. Advantage was taken of this occasion by his many admirers, to express their appreciation of the work which he has done for medical science. It is probable that no medical man has ever received such a universal tribute from his professional colleagues as was bestowed upon him on this occasion. Subscriptions were raised and memorial meetings were held in different parts of the world. In Berlin, an enormous gold medal weighing five or six pounds, was presented to him, and congratulatory addresses poured in from all directions.

An important step toward higher medical education in the United States was inaugurated by the Harvard Medical School and the University of Pennsylvania, which institutions almost simultaneously announced an increase from three to four years in the time required to obtain the degree of M.D. This requirement will go into operation in the case of the former school in 1892, and with the latter in 1893. The question of the compulsory five years' course has been much discussed, and finally adopted in England.

An institution for the study of infectious diseases has been opened in Berlin, and placed under the charge of Prof. Robert Koch. These diseases are to be systematically investigated as well as all questions connected with immunity. In England, the British Institute of Preventive Medicine has finally been officially allowed to exist. For a long time the granting of a charter to this institution was combated by anti-vivisectionists.

Among the associations which have been organized during the year may be mentioned, the Pan-American Medical Congress. This Congress is to meet in Washington, in October, 1893, and is to be composed of delegates from all countries on the two American continents. Dr. William Pepper, of Philadelphia, was elected President, and Dr. Charles A. L. Reed, of Cincinnati, Secretary. The National Association of Military Surgeons of the National Guard of the United States was organized in Chicago, the object being the advancement of military and accident surgery, and all things pertaining to the health, usefulness and welfare of the civilian soldier.

The Harvard Medical School Association was organized in Boston to furnish opportunities for enjoyment and sociability among the graduates, and to increase and foster the interests of the Medical School and University. In New York, a Harvard Medical Society was organized to be composed of graduates of the Harvard Medical School, residing in New York.

A Leprosy Commission, sent from England to India, and there joined by Indian members, has been investigating leprosy in all its relations. A report has been received that they have succeeded in cultivating the leprosy bacillus.

The winter of 1890–91 was a very severe one in Europe. Much hardship was caused in several countries, and many persons died of exposure, especially in the warmer districts, where they did not know how to protect themselves. In Paris public places were converted into places of refuge.

Several million peasants in Russia have been reduced to great distress by a series of failures of crops. The exportation of cereals has been forbidden and everything which could possibly be used for food has been prepared and eaten. Small-pox, typhus fever, and influenza have broken out in the afflicted districts.

Considerable excitement was roused during the summer, both in Paris and Berlin, over the report of certain cases in which cancerous tissue had been grafted into patients as an experiment. In Paris, M. Cornil described a case before the Academy of Medicine, not giving the name of the operating surgeon. The proceeding was strongly condemned by all of those present. In Berlin, a lawyer accused Professors Bergmann and Hahn of similar experimenting.

The novel New York law establishing electricity as a means of executing criminals has been further tested, five murderers having been killed during the year. The details were essentially the same as in the case of Kemmler, last year. Early in July, four men in succession were executed at Sing Sing. On account of the provision of the law, forbidding the publication of details, many conflicting accounts were circulated. The official reports announce that unconsciousness was instantaneous and that after three or four contacts of the current, each lasting a few seconds, death was certain.

We have heard a good deal in America during the year, from the daily press, of a cure for drunkenness, the proprietor of which is one Keeley, who has opened a sanitarium in Dwight, Ill., and who advertises to cure drunkeness by his so-called bichloride of gold treatment. This particular salt of gold is so unstable that it may be said not to exist, and different analyses of the substance have failed to reveal any gold at all, but the cure has been very popular, and branch institutions have been started in different parts of the country.

Among the calamities which have killed and injured many persons during the year may be mentioned the earthquake in Japan. On October 28th, according to a recent estimate, about 7,500 persons were killed and 10,000 injured; 90,000 buildings were wholly destroyed and 400,000 people made destitute. By the sinking of the steamer *Utopia* at Gibraltar, on March 17th, over 560 persons were drowned. The floods in Spain in September, destroyed many hundred lives and much property.

MEDICAL CONGRESSES AND MEETINGS.

Among the more important meetings of Medical Congresses and Societies during the year were the following:

The American Medical Association held its forty-second annual meeting in Washington, May 5th to 8th. The Massachusetts Medical Society held its one hundred and tenth annual meeting in Boston, June 9th and 10th. The New Hampshire Medical Society celebrated its hundredth anniversary, June 15th to 17th. The first annual business meeting and dinner of the Harvard Medical School Association was held in Boston, June 23d. The Association of Military Surgeons of the National Guard of the United States organized and held its first annual meeting in Chicago, September 18th. The American Association of Obstetricians and Gynecologists held its fourth annual meeting in New York, September 17th to 19th. The Second Triennial Congress of American Physicians and Surgeons met in Washington, September 22d to 25th. The component National Associations and Societies which form this Congress, each of which held its annual meeting during the session of the Congress are as follows: The American Surgical Association, Ophthalmological Society, Otological Society, Neurological Association, Gynecological Society, Dermatological Association, Laryngological Association, Climatological Association, Association of American Physicians, Association of Andrology and Syphilology, Orthopedic Association, Pediatric Association, Association of Anatomists, Physiological Society. The American Electro-Therapeutic Association held its first annual meeting in Philadelphia, September 24th to 26th. The Mississippi Valley Medical Association held its seventeenth annual meeting in St. Louis, October 14th to 16th. The American Public Health Association held its nineteenth annual meeting in Kansas City, October 20th to 23d. The Southern Surgical and Gynecological Association held its annual meeting in Richmond, November 10th to 12th.

The Fifth French Congress of Surgery was held at Paris, March 30th to April 1st. The Twentieth German Surgical Congress was held in Berlin, on April 1st to 4th. The Tenth German Congress for Internal Medicine was held at Wisbaden, April 6th to 9th. The Society of Hypnology met in Paris, on July 20th. The Congress for the Study of Tuberculosis was held in Paris, July 27th to 31st. The British Medical Association held its annual meeting at Bournemouth, July 28th to 31st. The Seventh International Congress of Hygiene and Demography was held in London, August 10th to 17th. There were nearly three thousand delegates present, from all the civilized countries of the world. The business was divided among ten sections, and many valuable papers were presented. The German Congress of Naturalists and Physicians was held at Halle, September 21st to 23d.

LECTURES.

In connection with established lectureships in the United States and Great Britain, the following lectures and orations were delivered:

The Mütter Lectures in Philadelphia, by Roswell Park, M.D., of Buffalo, on Selected Topics in Surgical Pathology; the Shattuck Lecture before the Massachusetts Medical Society, by Edward Cowles, M.D., on "Neurasthenia and its Mental Symptoms"; the Croonian Lectures, by J. Burdon Sanderson, M.D., F.R.S., on "The Progress of Discovery Relating to the Origin and Nature of Infectious Diseases during the last Twenty-five Years"; the Morton Lecture, by Oliver Pemberton, F.R.C.S., on "Cancer and Cancerous Diseases"; the Cavendish Lectures, by T. Lauder Brunton, M.D., D.Sc., LL.D., F.R.C.P., F.R.S., on "Elimination and its Use in Preventing and Curing Disease"; the Cameron Lecture, by Sir Joseph Lister, Bart., F.R.S., on "A Lesson in Antiseptic Surgery"; the Harveian Lectures, by J. F. Goodhart, M.D., on "Common Neuroses"; the Letsomian Lectures, by Stephen Mackenzie, M.D., F.R.C.P., on "Anæmia, its Pathology, Symptoms and Treatment"; the Lumleian Lectures, by W. H. Broadbent, M.D., F.R.C.P., on "Structural Diseases of the Heart Considered from the Point of View of Prognosis"; the Goulstonian Lectures, by Thomas Oliver, M.D., F.R.C.P., on "Lead Poisoning in its Acute and Chronic Manifestations"; the Erasmus Wilson Lectures, by J. Bland Sutton, F.R.C.S., on "The Value of Comparative Pathology to Philosophical Surgery"; the Milroy Lectures, by R. Thorne Thorne, M.B., F.R.S., F.R.C.P., on "Diphtheria, its Natural History and Prevention"; the Bradshaw Lecture, by Dr. Allchin, on "Duodenal Indigestion"; the Harveian Oration, by W. Howship Dickinson, M.D., F.R.C.P., on "Harvey, in Ancient and Modern Medicine"; the Hunterian Oration, by Fletcher Beach, M.B., F.R.C.P., on "Physiological Medicine in John Hunter's Time, and the Progress it has since Made."

NECROLOGY. — FOREIGN.

J. G. F. Baillarger, M.D., formerly president of the Académie de Médecine, died in Paris, December 31, 1890, aged eighty-two.

Thomas Graham Balfour, M.D., F.R.C.P., F.R.S., surgeon-general, retired, honorary physician to the Queen, etc., died January 17, aged seventy-seven.

Edward Bellamy, F.R.C.S., senior surgeon to Charing Cross Hospital, London, died January 4, aged forty-eight.

Sir James Risdon Bennett, M.D., formerly president of the Royal College of Physician, London, died December 14, aged eighty-two.

Giambattista Borelli, M.D., senator of the kingdom of Italy, died January 10, aged seventy-eight.

Richard G. H. Butcher, M.D., F.R.C.S.I., the inventor of different surgical apparatus, died in Dublin, March 21, aged seventy-two.

Carl Rudolf Braun, Ritter von Fernwald, professor of obstetrics and gynecology in the University of Vienna, etc., died March 28, aged sixty-nine.

Wilhelm von Etlinger, physician accoucheur to the Empress of Russia, died November 8, aged seventy-one.

George Gulliver, M.B., F.R.C.P., demonstrator of morbid anatomy at St. Thomas's Hospital, London, died January 11, aged thirty-nine.

Nicolas Gutierrez, M.D., professor of pathology in the University of Havana, died in January, aged about ninety.

Edmund Hartnack, who was the first to introduce immersion into microscopy, died in Potsdam, in January.

Sir Prescott Gardner Hewett, Bart., F.R.C.S., one of Her Majesty's sergeant-surgeons, and surgeon to the Prince of Wales, died June 20.

Ignatius Hirschler, a writer on diseases of the eye, died in Buda Pesth, November 11, aged sixty-eight.

Eugene Jendrassik, professor of physiology in the University of Buda Pesth, died in March, aged sixty-seven.

Friedrich W. Scanzoni von Lichtenfels, emeritus professor in the University of Würzburg, the author of many works on gynecology and obstetrics, died on June 12, aged sixty-nine.

W. Orlando Markham, M.D., F.R.C.P., formerly editor of the *British Medical Journal*, Goulstonian lecturer, etc., died January 23, aged seventy-two.

John Marshall, F.R.S., F.R.C.S., LL.D., M.D., professor of anatomy to the Royal Academy, etc., died in London, January 1, aged seventy-two.

Ernst Fleischl von Marxow, professor of physiology in the University of Vienna, died October 22, aged forty-five.

Heinrich Opensteiner, M.D., who had been the body physician of the Emperor Maximilian of Mexico, died in Vienna, January 25, aged seventy-one.

Henri Roger, M.D., ex-president of the Académie de Médecine, died in Paris, in November, aged eighty-two.

Franz Christoph von Rothmund, M.D., formerly professor of surgery in the University of Munich, died early in December, aged ninety-two.

Wilhelm Stricker, M.D., the author of many medical writings, died in Frankfort-on-the-Main, March 4, aged seventy-six.

William Henry Stone, M.D., F.R.C.P., F.R.C.S., physician to St. Thomas Hospital, Croonian, Lumleian and Harveian lecturer, died in London, July 5, aged sixty-one.

Henry Gawen Sutton, M.B., F.R.C.P., lecturer on pathology at the London Hospital, died June 9, aged fifty-five.

Hugh Owen Thomas, F.R.C.S., surgeon and inventor of different surgical appliances, died in Liverpool, January 6.

Carl Wedl, professor of histology in the University of Vienna, died September 23, aged seventy-six.

W. Weiss, professor of surgical pathology at the Bohemian University of Prague, died about July 10, aged fifty-six.

Friedrich Wieger, professor of internal pathology in the University of Strasburg, died in January, at the age of seventy.

NECROLOGY. — UNITED STATES.

Joseph W. Alsop, M.D., lieutenant-governor of Connecticut, died June 24, aged fifty-two.

Jesse P. Bancroft, M.D., for twenty-five years superintendent of the New Hampshire Asylum for the Insane, died April 30, aged seventy-five.

Fordyce Barker, M.D., LL.D., professor emeritus of clinical midwifery and the diseases of women at the Bellevue Hospital Medical College, etc., died in New York, May 30, aged seventy-three.

Henry F. Campbell, M.D., confederate surgeon, ex-president of the American Medical Association, died in Augusta, Ga., December 15, aged sixty-eight.

A. H. Chessmore, M.D., president of the Vermont State Board of Health, died January 27, aged fifty.

Frank Donaldson, M.D., emeritus clinical professor of diseases of the throat and chest, University of Maryland, died December 8, aged sixty-eight.

Morius Duval, M.D., brevet medical director and commodore United States Navy, died February 21, aged seventy-three.

Thomas P. Gary, M.D., president of the Florida Medical Association, died June 10, aged fifty-six.

Alfred Hosmer, M.D., ex-president of the Massachusetts Medical Society, etc., died in Watertown, May 14, aged fifty-eight.

Hosmer A. Johnson, M.D., professor of general medicine, emeritus, Chicago Medical College, died February 26, aged sixty-nine.

Christopher Johnston, M.D., professor of surgery emeritus in the University of Maryland School of Medicine, died October 11, aged sixty-nine.

Joseph Leidy, M.D., LL.D., professor of anatomy in the University of Pennsylvania and an eminent naturalist, died April 30, aged sixty-eight.

George B. Loring, M.D., of Salem, Mass., United

States minister to Portugal, died September 14, aged seventy-four.

George Hinckley Lyman, M.D., of Boston, Mass., died in London, August 19, aged seventy-two.

Richard Lee McDonnell, M.D., professor of clinical medicine at McGill University, Montreal, died July 31, aged thirty-five.

Edward Maynard, M.D., D.D.S., dental surgeon and inventor, died in Washington, May 3, aged seventy-eight.

John J. Milhau, M.D., surgeon and brevet brigadier-general United States Army, died in New York, May 8, aged sixty-three.

J. Dickinson Miller, M.D., brevet medical director and commodore United States Navy, died January 29, aged eighty.

John S. Messersmith, M.D., brevet medical director and commodore United States Navy, died in Lancaster, Pa., February 16 aged eighty-one.

Charles T. Parkes, M.D., professor of surgery in the Rush Medical College, Chicago, died March 28, aged forty-eight.

F. H. Potter, M.D., clinical professor of laryngology at the University of Buffalo, died July 16, aged thirty-one.

Thomas B. Reed, M.D., surgeon to the Presbyterian Hospital, Philadelphia, died April 1, aged fifty-six.

Thomas L. Smith, M.D., brevet medical director and commodore United States Navy, died in Brooklyn, August 14, aged ninety-one.

D. Humphreys Storer, LL.D., M.D., died in Boston, September 10, aged eighty-seven.

James K. Thacher, M.D., professor of physiology in Yale University, died April 20, aged forty-three.

J. L. Vandervoort, M.D., for more than fifty years librarian of the New York Hospital Medical Library, died July 20, aged eighty-two.

James W. White, M.D., D.D.S., president of the S. S. White Dental Manufacturing Company, died in Philadelphia, May 27, aged sixty-seven.

NECROLOGY. — MASSACHUSETTS MEDICAL SOCIETY.

Fordyce Barker, LL.D., M.D. (Honorary), of New York, N. Y., died May 30, aged seventy-three.

Buckminster Brown, M.D., of Boston, died December 24, aged seventy-two.

William Cogswell, M.D., of Bradford, died August 15, aged seventy.

William Wellman Dow, M.D., of Somerville, died May 8, aged fifty-seven.

Sidney Drinkwater, M.D., of Haverhill, died November 20, aged seventy-nine.

Horace Dupee, M.D., of Dorchester, died August 7, aged eighty-one.

Henry Dyer, M.D., of New York, N. Y., died September 21, aged eighty-seven.

George Eliot, M.D., of Boston, died May 22, aged twenty-five.

William Carroll Emerson, M.D., of Boston, died October 8, aged thirty-seven.

Lorenzo Smith Fox, M.D., of Lowell, died June 23, aged fifty-one.

Alfred Charles Garratt, M.D., of New York, N. Y., died June 30, aged seventy-eight.

Joseph Green Stevens Hitchcock, M.D., of Foxboro', died August 24, aged sixty-eight.

Alfred Fairbanks Holt, M.D., of Cambridge, died December 28, 1890, aged fifty-two.

Alfred Hosmer, M.D., of Watertown, died May 14, aged fifty-eight.

John Alban Kite, M.D., of Nantucket, died in October.

Harvey Knight, M.D., of Belleview, Fla., died March 26, aged forty-six.

Abel Cutting Livermore, M.D., of Stow, died March 15, aged sixty-six.

George Edward Livermore, M.D., of Lowell, died September 4, aged thirty-six.

John Dudley Lovering, M.D., of Newton Highlands, died March 18, aged sixty-four.

George Hinckley Lyman, M.D., of Boston, died August 19, aged seventy-two.

John Howell Mackie, M.D., of New Bedford, died March 5, aged sixty-five.

Prince Woodman Page, M.D., of Boston, died September 29.

Ralph Alfred Parsons, M.D., of West Roxbury, died April 3, aged twenty-nine.

Franklin Fletcher Patch, M.D., of Boston, died November 12, aged seventy-six.

Dom Pedro, Secundo, Emperor of Brazil (Honorary), died December 4, aged sixty-six.

Peter Pineo, M.D., of Hyannis, died September 10, aged sixty-six.

Horace Richardson, M.D., of Boston, died June 18, aged sixty-one.

Edward Sawyer, M.D., of Bridgewater, died December 21, aged fifty-three.

Preston Sheldon, M.D., of Wakefield, died April 17, aged thirty-seven.

David Humphreys Storer, M.D., of Boston, died September 10, aged eighty-seven.

Joseph Herman Streeter, M.D., of Roxbury, died May 30, aged seventy.

William Howland Taylor, M.D., of New Bedford, died July 20, aged thirty-seven.

Warren Tyler, M.D., of North Brookfield, died April 18, aged seventy-two.

Arthur Edouard Zepheren Vincelette, M.D., died July 3, aged thirty-seven.

Franklin Cooley Warren, Jr., M.D., of Boston, died January 2, aged thirty-seven.

Joseph Huckins Warren, M.D., of Boston, died March 24, aged fifty-nine.

Warren Jacob Whitney, M.D., of Dorchester, died March 11, aged eighty.

The Society has lost thirty-six members during 1891, whereas in 1890 forty members died. The average age is the same for the two years, almost exactly sixty.

MEDICAL NOTES.

AN EXTRA NUMBER. — On account of a peculiarity in the calendar this year, this volume of the JOURNAL consists of twenty-seven numbers, which increase does not involve any decrease in the size of any former or future volume.

FIRE IN AN INSANE ASYLUM. — The female division of the Eastern Michigan State Insane Asylum at Pontiac was entirely destroyed by fire during the past week. This fire again showed the necessity for a fireproof construction for hospitals for the insane. Although it is hoped that no inmates were burned to death, it was only by hard work and good luck that the loss of life was not large.

BOSTON AND NEW ENGLAND.

INFLUENZA AMONG THE POLICE.—According to the report of the Superintendent of the Police Department, seventy policemen, or one in every twelve members of the department were on the sick list on Monday.

MEDICAL INSPECTION IN THE PUBLIC SCHOOLS. — The Boston School Committee have recently passed an order that the request of the Board of Health to appoint a number of medical inspectors of the schools be granted, the School Board assuming no responsibility. The object and plan of this system of inspection will be found on page 360 of the JOURNAL for October 1st. This system may at present be said to be experimental. Fifty physicians will be appointed, and the inspection of the schools will probably begin on the first of the year.

THE DEATH-RATE OF BOSTON last week was 33 per thousand, the total number of deaths being 292, as against 187 for the corresponding week last year. Although only three deaths were reported as directly due to the epidemic of influenza, it is evident that this disease is largely responsible for the very high rate. The deaths from consumption numbered 32, from pneumonia 57, from bronchitis 27, and from "heart-disease" 20. Seventy-five of those who died were over sixty years of age.

LEGACY FOR THE LOWELL HOSPITAL. — Mrs. Thomas Talbot, of Lowell, has given to the Lowell City Hospital an endowment of $5,000 in memory of her husband, the late Governor Talbot.

THE WALTHAM HOSPITAL. — The charity ball in aid of the Waltham City Hospital is to be held in the Park Theatre, on January 1, 1892.

NEW YORK.

INFLUENZA. — The influenza has continued to increase in the community, and the number of deaths during the week ending December 26th, was largely in excess of the mortality of the previous week. On the day before Christmas the deaths from all causes amounted to 150, the largest number reported in the city on one day for several months, and of these, twelve were attributed to influenza and complications. On Christmas day the total number of deaths reported was 159, and of these, ten were attributed to the grip.

METEOROLOGICAL RECORD,

For the week ending December 12, in Boston, according to observations furnished by Sergeant J. W. Smith, of the United States Signal Corps: —

Date.	Barometer. Daily mean.	Thermometer. Daily mean.	Thermometer. Maximum.	Thermometer. Minimum.	Relative humidity. 8.00 A. M.	Relative humidity. 8.00 P. M.	Relative humidity. Daily mean.	Direction of wind. 8.00 A. M.	Direction of wind. 8.00 P. M.	Velocity of wind. 8.00 A. M.	Velocity of wind. 8.00 P. M.	We'th'r.* 8.00 A. M.	We'th'r.* 8.00 P. M.	Rainfall in inches
S.. 6	29.97	50	56	44	51	46	44	S.W.	S.W.	15	6		O.	
M.. 7	29.70	50	57	42	94	61	78	S.W.	N.W.	15	22	R.	O.	.39
T.. 8	30.24	37	42	32	58	51	54	W.	S.W.	7	13	C.	C.	
W. 9	30.15	42	51	34	43	49	46	S.W.	S.W.	26	16	O.	F.	
T..10	30.00	50	60	40	47	38	42	S.W.	W.	15	13	C.	C.	
F..11	30.16	46	50	41	61	65	63	W.	W.	11	9	C.	C.	
S..12	30.09	40	47	33	64	58	61	W.	S.W.	10	18	C.	O.	
☞	30.04	45	52	38	60	53	55			14	14			.06

* O., cloudy; C., clear; F., fair; G., fog; H., hazy S., smoky; R., rain; T., threatening; N., snow. † Indicates trace of rainfall. ☞ Mean for week.

RECORD OF MORTALITY

FOR THE WEEK ENDING SATURDAY, DECEMBER 12, 1891.

Cities.	Estimated population for 1890.	Reported deaths in each.	Deaths under five years.	Percentage of deaths from Infectious diseases.	Acute lung diseases.	Scarlet fever.	Typhoid fever.	Diphtheria and croup.
New York	1,515,301	734	250	13.72	20.44	3.68	.70	6.02
Chicago	1,099,850	462	177	19.80	18.04	3.68	8.36	4.40
Philadelphia	1,046,964	568	170	15.58	15.01	1.52	1.33	11.02
Brooklyn	806,343	350	114	15.37	23.20	2.90	2.32	6.38
St. Louis	451,770	—	—	—	—	—	—	—
Boston	448,477	213	64	8.55	25.20	.50	1.80	5.85
Baltimore	434,439	200	58	9.50	28.00	1.00	2.50	6.50
Cincinnati	296,908	178	38	8.96	18.48	1.12	1.12	5.60
Cleveland	262,000	82	30	19.52	6.10	—	1.22	14.64
New Orleans	242,039	157	53	15.36	7.64	—	—	1.28
Pittsburg	240,000	97	37	19.57	7.21	2.06	—	15.45
Milwaukee	240,000	85	45	31.86	8.26	5.90	3.54	18.88
Washington	230,392	98	36	17.51	9.27	—	2.06	7.21
Nashville	76,168	41	5	7.32	36.60	—	2.44	2.44
Charleston	65,165	33	13	—	6.06	—	—	—
Portland	36,425	15	3	13.33	6.66	—	—	6.66
Worcester	84,655	26	11	26.95	23.10	—	3.85	7.70
Lowell	77,696	34	9	14.70	14.70	2.94	—	—
Fall River	74,398	27	7	3.70	11.11	—	—	3.70
Cambridge	70,028	24	6	—	25.00	—	—	—
Lynn	53,727	12	—	8.33	16.66	—	—	—
Lawrence	44,654	21	4	14.28	33.33	4.76	—	9.52
Springfield	44,179	17	4	17.64	—	—	11.76	—
New Bedford	40,733	29	12	3.45	10.35	—	3.45	—
Salem	30,801	6	1	—	—	—	—	—
Chelsea	27,909	15	6	—	20.00	—	—	—
Haverhill	27,412	14	5	14.28	7.14	—	—	—
Taunton	25,445	7	3	—	—	—	—	—
Gloucester	24,651	5	2	—	—	—	—	—
Newton	24,379	5	1	—	60.00	—	—	—
Malden	23,031	6	1	—	16.66	—	—	—
Fitchburg	22,037	12	7	—	—	—	—	—
Waltham	18,707	6	0	16.66	16.66	—	16.66	—
Pittsfield	17,281	2	0	50.00	—	50.00	—	—
Quincy	16,723	4	1	—	—	—	—	—
Newburyport	13,947	—	—	—	—	—	—	—
Medford	11,079	3	3	33.33	—	33.33	—	—
Clinton	10,424	4	0	—	—	—	—	—
Hyde Park	10,193	—	—	—	—	—	—	—
Peabody	10,158	5	0	20.00	—	—	—	—

Deaths reported 3547: under five years of age, 1156; principal infectious diseases (small-pox, measles, diphtheria and croup, diarrhœal diseases, whooping-cough, erysipelas and fevers) 522, acute lung diseases 623, consumption 402, diphtheria and croup 241, typhoid fever 79, scarlet fever 75, diarrhœal diseases 61, malarial fever 19, cerebro-spinal meningitis 16, measles 12, erysipelas 10, whooping-cough 9.

From diarrhœal diseases New Orleans 14, New York and Chicago 10 each, Brooklyn and Washington 6 each, Philadelphia 4, Baltimore, Cincinnati and Pittsburgh 2 each, Milwaukee, Worcester, Lowell, Springfield and Peabody 1 each. From malarial fever New Orleans 8, Brooklyn 5, Philadelphia and Baltimore 2 each, New York and Nashville 1 each. From cerebro-spinal meningitis Chicago and Worcester 3 each, New York, Washington and Lowell 2 each, Philadelphia, Cleveland, Lynn and Haverhill 1 each. From measles New York 8, Phila-

delphia, Baltimore, Milwaukee and Portland 1 each. From erysipelas New York and Chicago 3 each, Philadelphia, Brooklyn, Cleveland and Lowell 1 each. From whooping-cough New York 4, Chicago 2, Brooklyn, Cleveland and Milwaukee 1 each.

In the twenty-eight greater towns of England and Wales with an estimated population of 9,405,108, for the week ending December 5th, the death-rate was 22.6. Deaths reported 4,081: acute diseases of the respiratory organs (London) 449, whooping-cough 152, measles 132, fever 58, diarrhœa 49, scarlet fever 45, diphtheria 40.

The death-rates ranged from 16.5 in Leicester to 38.9 in Sunderland, Birmingham 19 0, Bradford 18.5, Hull 18.9, Leeds 20.6, Liverpool 29.7, London 21.2, Manchester 24.1, Newcastle-on-Tyne 35.0, Nottingham 18.9, Preston 29.0, Sheffield 19.9.

In Edinburgh 38.2, Glasgow 31.4, Dublin 34.7.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 19, 1891, TO DECEMBER 25, 1891.

By direction of the acting Secretary of War, CAPTAIN EDWIN F. GARDNER, assistant surgeon, is relieved from further duty at Fort Porter, N. Y., and also from temporary duty at Fort Columbus, N. Y., to take effect upon the arrival at that post of CAPTAIN WALTER W. R FISHER, assistant surgeon, and will then proceed to Fort Mackinac, Michigan, for duty.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE-HOSPITAL SERVICE, FOR THE THREE WEEKS ENDING DECEMBER 19, 1891.

BAILHACHE, P. H., surgeon. Detailed as Chairman of Board for physical examination officer Revenue Marine Service. December 17, 1891.

STONER, G. W., surgeon. Granted leave of absence for twenty-one days. December 16, 1891.

CARTER, H. R., passed assistant surgeon. To proceed to South Atlantic Quarantine for temporary duty. December 10, 1891.

BANKS, C. E., passed assistant surgeon. To inspect unserviceable property at Marine Hospital, Baltimore, Md. December 10, 1891.

DEVAN, S. C., passed assistant surgeon. To proceed to Montreal, Canada, on special duty. November 30, 1891.

BETTUS, W. J., passed assistant surgeon. To report in person to the supervising surgeon-general. December 3, 1891. To proceed to New Berne, N. C., on special duty. December 12, 1891.

GOODWIN, H. T , passed assistant surgeon. Granted leave of absence for ten days. December 2, 1891.

STONER, J. B., assistant surgeon. Granted leave of absence for seven days. December 18, 1891.

CONDICT, A. W., assistant surgeon. Granted leave of absence for seventeen days. November 30, and December 15, 1891.

GUITÉRAS, G. M., assistant surgeon. Granted leave of absence for ten days. December 15, 1891.

STIMPSON, W. G., assistant surgeon. Granted leave of absence for ten days. December 2, 1891.

BROWN, B. W., assistant surgeon. Detailed as recorder of Board for physical examination officer Revenue Marine Service. December 17, 1891.

COFER, L. E., assistant surgeon. Granted leave of absence for fifteen days. December 15, 1891.

AN ARMY MEDICAL BOARD.

An Army Medical Board will be in session in Chicago, Illinois, during February, 1892, for the examination of candidates for appointment in the Medical Corps of the United States Army, to fill existing vacancies.

Persons desiring to present themselves for examination by the Board will make application to the Secretary of War, before January 15, 1892, for the necessary invitation, stating the date and place of birth, the place and State of permanent residence, the fact of American citizenship, the name of the medical college from whence they were graduated, and a record of service in hospital, if any, from the authorities thereof. The application should be accompanied by certificates based on personal knowledge, from at least two physicians of repute, as to professional standing, character, and moral habits. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a Regular Medical College, as evidence of which, his diploma must be submitted to the Board.

Further information regarding the examinations may be obtained by addressing the Surgeon-General U. S. Army, Washington, D. C. C. SUTHERLAND, *Surgeon-General U. S. Army.*

SOCIETY NOTICES.

SURGICAL SECTION OF THE SUFFOLK DISTRICT MEDICAL SOCIETY. — This Section will hold its regular monthly meeting at 19 Boylston Place, Wednesday, January 6, 1892, at 8 o'clock, P. M.

Dr. George W. Gay will present the subject of "Gangrenous Hernia, its Treatment — A Report of Six Cases."

Dr. Maurice H. Richardson will report a second successful case of Circular Enterorrhaphy for Gangrenous Hernia. Dr. Edward H. Bradford, Dr. Herbert L. Burrell, and Dr. Arthur T. Cabot will contribute to the discussion cases of gangrenous herniæ illustrating methods of treatment and the various complications arising.

CHARLES L. SCUDDER, M.D., *Secretary.*

BOSTON SOCIETY FOR MEDICAL OBSERVATION. — A regular meeting of the Society will be held at 19 Boylston Place, on Monday, January 4, 1892, at 8 o'clock P. M.

Dr. W. M. Conant will read a paper on "Imperforate Rectum." Discussion by Drs. A. T. Cabot, M. H. Richardson, W. D. Hodges and others.

Dr. Morton Prince will read a paper entitled, "Three Cases of Traumatic Functional Paralysis — Two of Twenty-nine and One of Twenty-eight Years' Duration; A Contribution to the Prognosis in Traumatic Neuroses."

A case of traumatic functional monoplegia (Charcot's type), with paresis of the face muscles will be shown.

JOHN C. MUNRO, M.D., *Secretary.*

RECENT DEATHS.

SIMEON TUCKER CLARK, M.D., died of apoplexy in Lockport, N. Y., December 24th. He was born at Canton, Norfolk County, Mass., on October 10, 1830. He received the degree of M.D. from the Berkshire Medical College, and in 1861, settled in Lockport, where he continued to practise up to the time of his death. He was well known as an alienist, writing many articles on insanity which were accepted as of the highest worth by American and European authorities, and for the past six years he occupied the Chair of Medical Jurisprudence in the Niagara University at Buffalo. He was also interested in literature, and was the author of several poems. From the time of its organization Dr. Clark took an active interest in the New York State Medical Association, and he was always a prominent figure at its annual meetings.

HENRY FRASER CAMPBELL, M.D., of Augusta, Ga., died December 15th, after an illness of some weeks, at the age of sixty-seven. He began the study of medicine at the age of fifteen, in the Medical Department of the University of Georgia. During the war he was commissioned as a surgeon in the Confederate Army. After the war he was called to New Orleans, where he filled the chair of anatomy, and later of surgery, in the New Orleans School of Medicine, but on account of ill-health returned to Augusta. He was elected President of the American Medical Association in 1885, having been the second Southern man to hold this position.

R. A. KINLOCK, M.D., died in Charleston, S. C., December 23d, aged sixty-five. He had been dean of the South Carolina Medical College and Vice-president of the American Medical Association.

BUCKMINSTER BROWN, M.D. (Harv. 1844) M.M.S.S., died at Auburndale, December 24th, aged seventy-two.

FREDERICK BEDFORD, M.D. (N. Y. Univ. 1859), died in New York, December 28th, aged fifty-four.

JOHN MINTER, M.D., Inspector-General of Hospitals, and honorary physician to the Queen, died in England, December 16th, aged seventy-five.

BOOKS AND PAMPHLETS RECEIVED.

Hand Disinfection. By Howard A. Kelley, M.D. Reprint. 1891.

The Ideal Dressing for the Abdominal Wound. By Howard A. Kelley, M.D., Reprint. 1891.

The Surgical Treatment of Pyloric Stenosis, with a Report of Fifteen Operations for this Condition. By N. Senn, M.D., Ph.D. Reprint. 1891.

Addresses and Essays. By G. Frank Lydston, M.D., Professor of Genito-Urinary Diseases and Syphilology, Chicago College of Physicians and Surgeons. Reprints. 1891.

The Treatment of Urethral Stricture and a New Divulsor for Rapid Dilatation. By Otis K. Newell, M.D., Surgeon to the Out-patient Department of the Massachusetts General Hospital in Boston. Reprint. 1891.

A Code of Rules for the Prevention of Infectious and Contagious Diseases in Schools, Being a Series of Resolutions passed by the Medical Officers of Schools Association. Third edition. London: J. & A. Churchill. 1891.